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G.S PAPER I

1. HISTORY

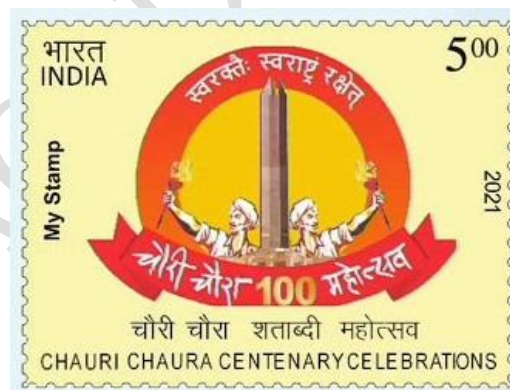
1.1 Chauri Chaura Centenary

Why in news?

2021 marks the Centenary year of the Chauri Chaura incident, a violent event with far-reaching consequences during the freedom struggle.

What happened back then?

- On August 1, 1920, Gandhi had launched the Non-Cooperation Movement against the government.
- It involved a boycott of foreign goods, especially machine-made cloth, and legal, educational and administrative institutions.
- In the winter of 1921-22, volunteers of the Congress and the Khilafat movement were organised into a national volunteer corps.
- Volunteers were trying to stop trade in foreign cloth, and enforce a just price for meat and fish.
- A few days before the Chauri Chaura incident, police cracked down on these volunteers.
- They severely beat up one Bhagwan Ahir, a demobilised soldier from the British Indian Army.
- On February 4, volunteers met in the town.
- After a meeting, they proceeded to the local police station, to picket the nearby Mundera bazaar.
- They ignored warning shots fired in the air by police and pelted the police with stones.
- The police fired into the crowd, killing three people and injuring many others.
- A large crowd of peasants set on fire the police station in Chauri Chaura, killing 22 policemen.
- The volunteers saw the abolition of the station as a sign of the arrival of "Gandhi raj".



What was the British response?

- Raids and repression followed immediately, lists of volunteers were compiled, and large numbers of suspects were rounded up.
- A sessions court quickly sentenced as many as 172 of the 225 accused to death.
- Ultimately, 19 of those convicted were sent to the gallows.

How did Gandhi react?

- Gandhi's non-violence strategy was based on the premise that the use of repressive force against non-violent protesters would expose and weaken the semi-hegemonic character of the colonial state.
- So, incidents such as Chauri Chaura defeated that strategy.
- Gandhi was deeply disturbed by the incident and condemned the "crime" of the policemen's killing.
- The volunteer groups in the nearby villages were disbanded.
- A Chauri Chaura Support Fund was set up to demonstrate "genuine sympathy" and seek atonement.



- Gandhi decided to stop the Non-Cooperation Movement, which he saw as having been tainted by unforgivable violence.
- He bent the Congress Working Committee to his will, and on February 12, 1922, the satyagraha was formally suspended.

How was the decision received?

- Most of the leaders of the national movement were disappointed with Gandhi's decision.
- The disillusionment made many of the younger Indian nationalists to come to a conclusion that India would not be able to throw off the colonial yoke through non-violence.
- It was from the ranks of these impatient patriots that some of India's most beloved revolutionaries were to arise in the years to come.
- These include Jogesh Chatterjee, Ramprasad Bismil, Sachin Sanyal, Ashfaqulla Khan, Jatin Das, Bhagat Singh, Bhagwati Charan Vohra, Masterda Surya Sen, and many others.

"I would suffer every humiliation, every torture, absolute ostracism and death itself to prevent the movement from becoming violent."

M.K Gandhi

2. POLITY

2.1 Perarivalan Case

Why in news?

- Tamil Nadu Governor Banwarilal Purohit has declined to take a call on a plea for the early release of Rajiv Gandhi assassination case convict A.G. Perarivalan.
- The Governor said the President of India was the "appropriate competent authority" to deal with Perarivalan's request for freedom.

What is the case on?

- Perarivalan is one of the 7 life convicts in the former Prime Minister Rajiv Gandhi assassination case.
- He has been in prison for almost 30 years for his role in the assassination of Rajiv Gandhi during the 1991 election campaign.
- He was taken away for 'minor interrogation' in the assassination case.
- It is 20 years since he was sentenced to death for procuring two nine-volt batteries that was used in the assassination, the purpose of which he was unaware of.

How has the case progressed?

- The CBI has charged Perarivalan for terrorist offences under the Terrorist and Disruptive Activities (Prevention) Act, or TADA.
- The CBI charges against him were upheld by the trial court along with the conspiracy to commit murder under the Indian Penal Code (IPC).
- Over the course of many rounds of litigation, his conviction only for the conspiracy to commit murder under the IPC has been sustained and the TADA charges against him were dropped.
- He has served 30 years as part of his life imprisonment sentence (his death sentence was commuted in February 2014).
- **Confession** - At the core of his conviction is his confession to a police officer, a legacy of the TADA that was carried forward under the Prevention of Terrorism Act (POTA).
- Confessions to a police officer are inadmissible as evidence under the Indian Evidence Act (to protect people from coerced police confessions).
- However, terrorism legislations such as TADA and POTA made confessions to the police admissible.
- This is as long as it was made to an officer not lower than the rank of Superintendent of Police.



What is the concern with this confession?

- The CBI's main weapon against Perarivalan was his confession to an SP.
- He allegedly confessed to his role in procuring a car battery for the main conspirator and purchasing two 9-volt batteries that were used in making the bomb.
- However the concerned SP came out in November 2013 and revealed that he had omitted to record Perarivalan's statement that he did not know the purpose for which the battery was procured.
- In effect, Perarivalan was convicted based on a manipulated confession to a police officer.

What are the legal shortcomings?

- The Supreme Court has dropped the TADA charges against Perarivalan.
- Despite this, his confession which was admissible only due to provisions of the TADA was then used to convict him for IPC offences.
- Justice M.C. Jain's Report (Jain Commission Inquiry) to Parliament in March 1998 identified massive gaps in the CBI's investigation.
- To address these concerns, the CBI constituted the Multi-Disciplinary Monitoring Agency (MDMA) in December 1998.
- Over two decades, the MDMA has been submitting reports in sealed covers to the TADA Court.
- Perarivalan has been denied access to these.
- However, the MDMA has repeatedly stated that Perarivalan and the other accused are not part of these ongoing investigations.

How has Perarivalan's legal fight progressed?

- Having served 30 years of life imprisonment for the conspiracy to murder, his effort to get a remission under the Code Of Criminal Procedure was rejected by the Central Government in April 2018.
- However, Perarivalan continued to be entitled to have his pardon considered by the Governor of Tamil Nadu under Article 161 of the Constitution.
- His application for a pardon had been pending with the Governor since December 2015.
- Under the Constitution, the Governor is bound by the aid and advice of the State government in the exercise of pardon powers.
- Meanwhile, the central government employed obfuscation as a strategy to prolong Perarivalan's incarceration.
 - It had initially maintained that the issue of pardon was solely between the Governor and Perarivalan.
 - However, the Centre took a constitutionally untenable argument before the Supreme Court in December 2020.
 - It said that it was the President of India who had the power to consider Perarivalan's pardon.
 - Then on January 21, 2021, the Centre submitted to the Supreme Court that the Governor would take a decision on Perarivalan's pardon within a matter of days.

What is the recent development?

- On February 4, 2021, the Centre informed the Court that the Governor had finally considered Perarivalan's pardon.
- The Governor had decided that the President alone had the power to consider such an application.
- It is clearly an abdication of a constitutional duty and is unconstitutional to ignore the advice of the State government, which the Governor is constitutionally bound to follow.

2.2 Andhra-Odisha Border Dispute

Why in news?

Andhra Pradesh recently held panchayat elections in three villages in the Kotia cluster, which is at the centre of a dispute between Andhra Pradesh and Odisha.



What are these disputed villages?

- The 21 villages, with a population of nearly 5,000, are located on a remote hilltop on the inter-state border.
- These are inhabited by the Kondh tribals.
- The region was once a Maoist hotbed and still reports sporadic incidents of violence.
- It is also rich in mineral resources like gold, platinum, manganese, bauxite, graphite and limestone.

What is the origin of the dispute?

- Prior to April 1, 1936, villages under Kotia panchayat were part of Jeypore Estate.
- In the Constitution of Orissa Order, 1936, the Government of India demarcated Odisha from the erstwhile Madras Presidency.
- The Presidency included the present-day Andhra Pradesh.
- In 1942, the Madras government contested the boundary and ordered re-demarcation of the two states.
- In a joint survey of Odisha, Bihar and Madhya Pradesh, seven villages of Kotia gram panchayat were recorded as revenue villages.
- Revenue was collected by the Odisha government.
- But, the exercise left out the 21 villages now under dispute.
- When the state of Andhra Pradesh was created in 1955, the villages were not surveyed by the Andhra Pradesh government either.

What is the administrative position?

- This is the first time Andhra has held panchayat polls in any of these 21 villages.
- But the villages participate in Assembly and Lok Sabha elections for both states.
- They are registered as voters for -
 - i. Salur Assembly and Araku Lok Sabha seats of Andhra
 - ii. Pottangi Assembly and Koraput Lok Sabha seats of Odisha
- The villagers enjoy benefits from both states under various schemes.

What is the current status?

- In the early 1980s, Odisha filed a case in the Supreme Court demanding right and possession of jurisdiction over the 21 villages.
- In 2006 however, the court said that disputes belonging to the state boundaries are not within the jurisdiction of the Supreme Court.
- So, it ruled that the matter can only be resolved by the Parliament.
- The Court thus passed a permanent injunction on the disputed area.
- In Andhra, Vizianagaram District Collector said the three villages are separate gram panchayats and fall under Salur Mandal, hence elections were held.
- A day after Andhra notified the panchayat elections here, Odisha Chief Minister Naveen Patnaik inaugurated projects worth Rs.18 crore.
- The Odisha government has also moved the Supreme Court now.

2.3 Voice Vote as Constitutional Subterfuge

What is the issue?

- The Karnataka Prevention of Slaughter and Preservation of Cattle Bill was recently passed by the State's Legislative Council by voice vote.
- The practice of resorting to voice vote and passing bills despite lack of a majority is increasing, and here is a constitutional assessment of it.



How was the Bill passed?

- The law was passed by the Upper House despite the lack of a majority.
- A division vote based on actual voting is the usual practice.
- But, instead of this, the presiding officer just declared the Bill passed by voice vote without any division.

Voice Vote (Rule 252)

Vote taken by calling for ayes and noes and estimating which response is stronger

No names of the voters are recorded

Why is this notable?

- A similar process was followed to pass the controversial farm laws (by the Rajya Sabha) in September 2020.
- Here too, the government seemed to lack a majority to pass the bills in the Upper House.
- And instead of a division vote, a voice vote was deemed to be adequate by the Deputy Speaker of the House.
- In both cases, the disturbance caused by the Opposition was used as a pretext to resort to a voice vote.
- The government has repeatedly invoked multiple consultations around these laws.
- However, the fact that the pieces of legislation were passed without an actual legislative majority voting has not been given due attention.

What do these practices imply?

- The increasing use of this route was defended by the Leader of the Rajya Sabha.
- He condemned the repeated questioning by the indirectly elected Rajya Sabha of the wisdom of the directly elected Lok Sabha.
- Underlying this common sentiment is a tendency to devalue bicameralism itself.
- Lok Sabha is seen as directly representing the will of the people, and the Rajya Sabha as standing in its way.
- Democracy itself is seen purely in terms of parliamentary majority in the Lower House.
- So, the countervailing function of the Upper House is rarely seen as legitimate.

Why is bicameralism crucial?

- The two Houses are chosen by different processes of representation and elected on a different schedule.
- The very questioning of the monopoly of the Lower House to represent the 'people' makes bicameralism desirable.
- In India, the Rajya Sabha membership is determined by elections to State Assemblies.
- This leads to a different principle of representation, often allowing different factors to prevail than those in the Lok Sabha elections.
- The second chamber's performance of a review role becomes particularly important.
- This offers the opportunity for a second legislative scrutiny.

2.4 A Relook into the Sedition Law

What is the issue?

- Recent charges of sedition [IPC Section 124A] against individuals have brought the focus back to a law introduced in 1870.
- The fact that this law is often used to control dissent calls for a relook into its relevance at the present age.

What was the Supreme Court's observation?

- In Kedar Nath Singh v. State of Bihar (1962), the Supreme Court upheld the constitutional validity of the sedition law.
- It noted it as being a reasonable restriction on free speech as provided in Article 19(2) of the Constitution.
- It made clear that a citizen has the right to say or write whatever she/he likes about the government, or its measures.

- But this is only as long as she/he does not incite people to violence against the government and not do things with the intention of creating public disorder.

What are the legal procedures to be followed?

- Following the Kedar Nath case, the Bombay High Court issued some guidelines in the case of cartoonist Aseem Trivedi.
- These include an objective evaluation of the material.
 1. This is to form an opinion on whether the words and actions cause disaffection, enmity and disloyalty to the government.
 2. They must be of the magnitude to incite violence or tend to create public disorder.
- The Court also directed obtaining a legal opinion in writing from a law officer of the district who must give reasons on how the pre-conditions are met.
- This needs to be followed by a second opinion from the State's public prosecutor.
- Courts have on numerous occasions cautioned law enforcement agencies not to misuse the provisions on sedition, and follow court directions.

Why is a relook on the law needed?

- Between 2016 and 2019, the number of cases of sedition under Section 124A increased by 160%.
- On the other hand, the rate of conviction dropped to 3.3% in 2019 from 33.3% in 2016.
- Many charged were individuals protesting government action.
- The Constitution Bench in Kedar Nath held that this falls outside the ambit of sedition.
- The circumstances thus require a complete relook at the provisions of the sedition law.
- In the Internet age, what can lead to public disorder has itself become debatable, as information travels at lightning speed.
- Interestingly, the U.K. repealed the offence of sedition in 2010 and India is holding onto a relic of the British Empire.

Famous sedition trials during freedom movement:

Some of the most famous sedition trials of the late 19th and early 20th century involved Indian nationalist leaders. The initial cases that invoked the sedition law included numerous prosecutions against the editors of nationalist newspapers.

The first among them was the trial of **Jogendra Chandra Bose** in 1891. Bose, the editor of the newspaper, *Bangobasi*, wrote an article criticizing the Age of Consent Bill for posing a threat to the religion and for its coercive relationship with Indians.

The most well-known cases are the three sedition trials of **Bal Gangadhar Tilak** and the trial of **Mahatma Gandhi** in 1922. Gandhi was charged, along with Shankerlal Banker, the proprietor of Young India, for three articles published in the weekly.

2.5 Defamation as Crime

Why in news?

Recently Supreme Court has acquitted the journalist Priya Ramani in a criminal defamation case.

What is the case all about?

- In 2018, Ramani had made allegations of sexual misconduct against the minister Mr. Akbar in the wake of Me Too movement in the twitter.
- Due to the media storm, Mr. Akbar was forced to resign his position as a Minister & later filed a criminal complaint for defamation against Ms. Ramani.
- Now the court acquitted her stating that woman cannot be punished for criminal defamation when she raises her voice against sexual harassment.

What was the Court Verdict?

- The court accepted the evidence of Ms. Ramani & said it is credible, detailed enough and said the right of reputation cannot be protected at the cost of right of life and dignity of woman.

- It has taken note of the unequal equations of power between the harasser and victim in most situations.
- The court highlighted that though the tweets may result in loss of dignity and self-confidence of women but she has every right to put her grievance at any platform of her choice.
- It also mentions that women need to have freedom, equality, equal opportunity and social protection, if they were to excel in their workforce & their participation is undesirably low.

2.6 Structural Flaws in UTs

What is the issue?

- Recently in Puducherry, resignation of ruling party MLAs has lead to fall of the government.
- This highlights the structural issues present in creation of Union Territories (UTs) in Indian federation.

What are the structural issues in UTs' constitutional setup?

- The issues pertain to legislature composition, nomination of member to the assembly and administrators power.
- In order to fulfil the democratic aspirations of the people in UTs, Constitution-makers provided legislature and Council of Ministers (CoM's) to some of the UTs.
- In 1962, **Article 239A** was brought in which enabled the Parliament to create legislatures for the UTs.
- But detailed analysis of this provision reveals that it goes against the policy of the state to promote democracy.
- In UTs, legislatures can be a body that is elected or partly elected or partly nominated.
- There can also be CoM's without legislature or there can be a legislature as well as a CoM's.
- Legislature without a CoM's or a CoM's without legislature is absurd because in our constitutional scheme the government is responsible to the legislature.
- Similarly, a legislature that is partly elected and partly nominated is another absurdity.
- This is because simple amendment in the Government of Union Territories Act, 1963 can create a legislature with more than 50% nominated members which cannot be a representative democracy.

What is the issue with nomination in UTs?

- The purpose of nomination is to enrich the debate in the House by their expertise.
- In Puducherry, **Government of Union Territories Act** provides for 33-member House where in three are nominated by Centre.
- When the centre nominated its members to the Assembly without consulting the state, it was challenged in the Supreme Court.
- In **K. Lakshminarayanan v. Union of India case**, Court held that centre is not required to consult for nominating & nominated members have the same right to vote as the elected members.
- **Article 80** also has the provision for nomination of members to the Rajya Sabha but it clearly specifies the fields from which they can be nominated.
- But in case of Puducherry Assembly, no such qualification is laid down.
- This creates arbitrariness where centre can nominate anyone irrespective of whether he or she is suitable.

What is the issue in Administrator's power?

- **Article 239 AA** states that administrator or Lieutenant Governor can disagree with the decisions of COMs and refer it to the President for final decision.
- Then it is the President who decides based on the advice given by the Union government.
- So it is the Union government which finally determines the disputed issue.
- The administrator of UTs can in fact disagree with all crucial decisions taken by the State when the territory is ruled by a different political party.

- In **NCT of Delhi v. Union of India case**, Court said that the administrator should not misuse the power provided in Article 239 AA & use it if all other methods fail to reconcile the differences.
- But the reality is very much different from the court's verdict.

What can we infer from this?

- No Union government will like the idea of a free and autonomous government in the UTs and it tries to control UTs with an administrator.
- But experience shows that the UTs having legislatures with ultimate control vested in the central administrator is not workable.
- Hence the legal and constitutional provisions which enable the administrator to stand over the elected government needs to be removed.

2.7 Protection of Children from Sexual Offences Act

Why in news?

In the **Satish Ragde v. State of Maharashtra** case the accused was acquitted under POCSO Act.

What is POCSO act

- The act was enacted in 2012 especially to protect children aged less than 18 from sexual assault.
- It admitted that a number of sexual offences against children were neither specifically provided for in existing laws nor adequately penalised.
- Therefore an offence against children needs to be explicitly defined and countered through proportionate penalties so that it acts as an effective deterrence.
- The **UN Convention on the Rights of the Child** which was ratified by India in 1992 requires sexual exploitation and sexual abuse to be addressed as heinous crimes.

How does POCSO and IPC deal with sexual assault?

- In IPC the definition of assault or criminal force to woman with intent to outrage her modesty is very generic.
- In POCSO, the acts of sexual assault are explicitly mentioned such as touching various private parts or doing any other act which involves physical contact without penetration.
- However it excludes rape which requires penetration; otherwise the scope of 'sexual assault' under POCSO and 'outraging modesty of a woman' under the IPC is the same.
- IPC provides punishment for the offence irrespective of any age of the victim but POCSO is specific as it is for the protection of children.
- Section 7 of the POCSO Act says that whoever with sexual intent touches the breast of the child is said to commit sexual assault & the Section 8 of Act provides minimum imprisonment of 3 years.
- But Section 354 of IPC lays down a minimum of 1 year imprisonment for outraging the modesty of a woman.

What is present judgment?

- The Bench acquitted a man found guilty of assault on the grounds that he touched the victim's limbs and breasts only over her clothes and there was no skin-to-skin contact between them.
- In **Vishaka v. State of Rajasthan (1997)**, the Supreme Court held that the offence relating to modesty of woman cannot be treated insignificant.
- In **Pappu v. State of Chhattisgarh (2015)**, though the High Court, acquitted the accused under Section 354 of the IPC as the offence was found lacking in use of criminal force or assault.
- But it convicted him for sexual harassment under Section 354A which requires physical contact and advances as a necessary element.
- In UK, **Sexual Offences Act 2003** says that touching (with sexual intent) includes touching with any part of the body, with anything else or through anything.
- But the POCSO Act is silent on these matters & it requires skin-to-skin touch as a mandatory element of an offence for the conviction.

3. GOVERNMENT ACTS & POLICIES

3.1 Constitution (Scheduled Castes) Order (Amendment) Bill 2021

Why in news?

- The Government of India tabled the Constitution (Scheduled Castes) Order (Amendment) Bill 2021.
- It groups 7 SC sub-sects under one name (Devendrakula Velalar).

What is the Bill about?

- The Tamil Nadu government proposed certain modifications to the list of the Scheduled Castes.
- It groups seven Scheduled Caste sub-sects in Tamil Nadu under the heritage name 'Devendrakula Velalar'.
- These castes existed as separate entries.
- Any change in the lists of the Scheduled Castes and Tribes requires a constitutional amendment.
- The Constitution (Scheduled Castes) Order (Amendment) Bill 2021 would give effect to the change.
- The grouping of the castes is a long-standing political demand in Tamil Nadu.
- However, the Bill does not address the other demand of some community leaders i.e removal of their castes from the Scheduled Caste list.

What is the rationale for grouping?

- Caste-based political parties and organisations feel that shedding individual Dalit caste tags would help in the social advancement of the community.
- Their argument is that existing caste names were being used more in a derogatory sense to belittle the community.
- Besides, these seven Scheduled Caste subsects share similarities, culturally.

What are the concerns and challenges with the move?

- Delisting and shuffling of castes from one reserved social class to another is fraught with political and administrative risks.
- It could disturb the internal sharing of the communal reservation quota pool by existing castes.
- Also, it could invite objections from other communities or spur political demands for similar reclassification.
- Among the Dalits too, opinion is divided on the grouping of subsects under a common title.
- They argue that Dalits as such cannot be treated as a homogeneous group.
- There are differences within the entities in terms of social status and geographical identity.

3.2 MTP Amendment Bill 2020

Why in news?

The Medical Termination of Pregnancy (Amendment) Bill, 2020 passed in the Lok Sabha in March 2020, is scheduled to be tabled for consideration in Rajya Sabha.

What are the key provisions?

- The Bill amends the Medical Termination of Pregnancy Act, 1971.
- **Termination Period** - It seeks to extend the termination of pregnancy period from 20 weeks to 24 weeks.
- This would make it easier for women to safely and legally terminate an unwanted pregnancy.
- For termination of pregnancy up to 20 weeks of gestation, the opinion of one registered medical practitioner will be required.
- For termination of pregnancy of 20-24 weeks of gestation, opinion of two registered medical practitioners will be required.



- **Special Categories** - It also proposes to extend the upper gestation limit from 20 to 24 weeks for special categories of women.
- These include vulnerable women including survivors of rape, victims of incest and other vulnerable women (like differently-abled women, minors), etc.
- Upper gestation limit will not apply in cases of substantial foetal abnormalities diagnosed by Medical Board.
- Name and other particulars of a woman whose pregnancy has been terminated shall not be revealed except to a person authorized in any law for the time being in force.
- The original law states that, if a minor wants to terminate her pregnancy, written consent from the guardian is required.
- The proposed law has excluded this provision. The Bill applies to unmarried women too.
- This relaxes one of the regressive clauses of the 1971 Act, i.e., single women could not cite contraceptive failure as a reason for seeking an abortion.

What are the concerns?

- The MTP law is framed not to respect a woman's right over her own body.
- It instead makes it easier for the state to stake its control over her body through legal and medical debates.
- To illustrate, if a woman has had voluntary sex and she decides, for personal reasons, to end her pregnancy at the 24th week or later, then this would be a criminal offence.
- In such circumstances, women usually resort to unsafe methods of abortion.
- Notably, unsafe abortions are the third largest cause of maternal deaths in India.
- The amendment too continues this legacy of hetero-patriarchal population control, which does not give women control over their own bodies.
- **Inclusiveness** - The Bill uses the word "women" throughout.
- This, in effect, denies access to safe abortion to transgender, intersex and gender diverse persons.
- **Medical boards** - The Bill mandates the government to set up a medical board in every State and UT.
- Poor public health infrastructure and absence of specialists have meant that most abortions do not happen in the public sector, but at private centres or at home.
- There is overwhelming shortfalls in specialist availability, especially in rural and scheduled areas.
- Given this, it would be impossible to constitute boards with requisite specialist representation.

3.3 Centre's New IT rules

Why in news?

Recently Centre has announced drastic changes in Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.

What the amendments in the IT rules?

- The new rule asks the social media platform to reveal the originator of the message posted.
- It proposes for voluntary verification of users and a compliance officer and grievance officer.
- It brings social media and streaming services under the government's regulatory framework.
- It lays down rules, principles for offering safeguards w.r.t. digital and online media.
- It cautions online content platforms not to impact India's sovereignty and integrity.

What is the issue with the new rules?

- Firstly, tracing the originator of the message will affect the privacy as end-to-end encryption will be broken.
- In an environment where cyber security threats prevail and absence of surveillance oversight mechanism, this rule creates a fear and self-censorship among users.



- Secondly, government's regulation of digital media platforms is done without any clear legislative backing.
- Now the government can perform the same function which is done by Ministry of Information and Broadcasting for TV regulation.
- For instance, this can include powers of censorship such as apology scroll and blocking of content.
- Moreover this oversight function will be done by high ranking bureaucrats not by an autonomous regulator.
- This provides government the discretionary powers for exercising censorship over these platforms.

What can we infer from this?

- Social media platforms cannot be left unregulated but there must be safeguards in their oversight.
- Regulation needs to be achieved through deliberative, parliamentary processes and by examining bodies in other democracies which face similar challenges.
- In U.K., OFCOM (regulator) enforces regulations which give high levels of protection for citizen's rights and it is consistent in its enforcement.
- Hence the new rules suffer from legal faults and it will only increase political control over the platforms.

3.4 Four Capitals

Why in news?

Recently, West Bengal CM suggested that India should have four capitals.

What is the issue of having four capitals?

- Four capitals means that there should be Parliament buildings in three other regions & accommodation for all MPs and adjunct staff has to be constructed.
- MPs in the northern parts of the country would prefer to be in their existing accommodations while others prefer to settle in the capital close to their region.
- During Parliament sessions, MPs will descend to their envisaged capitals leaving the residential accommodations vacant for months after every session.
- This involves huge expenditure as MPs and their staffs have to fly to and from these capitals.
- In 1980s, Tamil Nadu CM proposed to shift the State capital to Tiruchirappalli but it was dropped later.
- Moreover providing security to all the MPs will be a huge burden for the State Police and also their vacant accommodations needs to be guarded round the clock.

Can this model be adopted for Supreme Court?

- In January 2021, the Bar Councils of five southern States asked for a Supreme Court bench in South India.
- This is because all people can't afford to travel to New Delhi to engage lawyers and plead their cases.
- The exorbitant fee of the Supreme Court lawyers in New Delhi is another deterrent.
- Even the Attorney General suggested for four benches of Court of Appeal with 15 judges across the country to reduce the burden of the Supreme Court.
- This enables judges to go through each case thoroughly and deliver a well-thought-out verdict and leaving the apex court to deal with constitutional issues.
- But this requires amendment the Constitution.
- Easy accessibility to justice for every citizen is a right that cannot be countered.



4. HEALTH

4.1 3rd ICMR Serological Survey

Why in news?

Recently ICMR has released its 3rd serological survey to ascertain the spread of COVID-19.

What does the survey reports?

- It shows that nearly one in five Indians — about 270 million — may have been infected & there has been a three-fold rise in infections when compared to the 2nd serological survey.
- There has also been a five-fold rise (in percentage terms) of the infection in those aged 10-17 years & 3rd edition includes a serological survey of doctors, nurses and paramedical staff.
- This reveals that nearly 25% of this composition are infected which is significantly above the national average.
- It emphasises that significant proportion of people are still potentially vulnerable, underscoring the need to be vaccinated and continue with social distancing and use of masks.

What does this survey vary from other surveys?

- ICMR survey-results appear to be more conservative in estimating the true spread of disease when compared to city-focused serology surveys in Delhi and mathematical modelling estimates.
- Experts say that there is declining trend in infections since September and there is absence of multiple peaks in corona virus cases and speeding up herd immunity.
- But neither ICMR survey nor city-wide survey evaluated how long antibodies persist and if certain virus mutant variants can overcome the protection from antibodies.

What are the concerns in the survey?

- It is now no longer useful to know that 80% of India is still vulnerable given that vaccines are available.
- Rather, such surveys must shift focus on certain questions- rise in spread among teenagers and children mean that they must be vaccinated earlier than the scheduled time.
- It should focus on whether companies should accelerate trials to test protection in children and rise in cases in rural India mean that they be given vaccines earlier.
- ICMR and the government health facilities must coordinate with a broader spectrum of specialists to investigate on these questions which can be used to guide and modify vaccination policy.

4.2 Telehealth can help India

Why in news?

WHO in its July 2020 survey across 105 countries revealed that essential medical services got disrupted in the majority of countries.

What does the report say?

- Immunisation, antenatal and childcare services are the most widely affected services among them.
- 45% of low-income countries incurred at least partial disruption of over 75% of services whereas it is 4% in high-income countries & in South East Asia, 60% of services were got partially disrupted.
- In India, detection of TB cases was down by 50% in April-December of 2020 relative to the same period in 2019 and antenatal care visits were down by 56% in the first half of 2020.
- With stoppage of routine follow ups, blood sugar control for diabetics is at risk & Cancer care has been badly affected in many countries.

How can technology help in combating this issue?

- During the pandemic, E Sanjeevani platform offered provider-to-patient and provider-to-provider interactions, where patients visit Smartphone-equipped community health officers.

- They in turn connect to general practitioners and specialist through a hub-and-spoke model & this approach can be applied to deliver other health care services.
- In remotely shared medical appointments (SMA), multiple patients with similar medical needs meet with clinicians at once who receive individual attention which will increase telehealth capacity.
- This method is successfully adopted in the United States for over 20 years.
- SMAs enable peer support, peer-to-peer learning which can improve both productivity and outcomes for many conditions, notably diabetes.
- The Aravind Eye Hospital in Puducherry has successfully trialled in-person SMAs for patients with glaucoma and found that patients engage more and ask more questions.
- E-Sanjeevani and other telehealth platforms could offer such virtual shared medical appointments.
- Moreover this will help in building supportive bonds, enable sharing of local knowledge which can attract supplementary providers (physiotherapists, optometrists).

What are the challenges in it?

- Switching to radically different care delivery models requires rigorous testing combined with mentoring, training and behaviour change for both patients and providers.
- Adoption of in-person shared medical appointments has been slow.
- ECHO which train primary-care providers through an online can accelerate this model of care.

5. GOVERNANCE

5.1 Fighting Against Corruption

Why in news?

Recently Odisha government declared that all public servants are mandatorily required to file their property returns with the Lok Ayukta.

What is the existing mechanism to fight corruption?

- In India, politico-bureaucratic nexus is the cause for systematic corruption & the preventive aspect of it is often neglected.
- Lokpal and Lok Ayuktas Act, 2013 which fights against corruption is existing for more than half a decade.
- But its implementation is uneven and the deadline to file the property declarations is constantly deferred.
- Initially it was set at September 15, 2014, but later this date was extended for six times.

What causes corruption?

- Information asymmetry is the primary culprit behind illegal wealth acquired by bureaucrats and political functionaries.
- Now Odisha government stated that all political and bureaucratic functionaries have to publicly declare their assets at the end of every year.
- This baseline data-base of assets provides significant insights into the asset ownership pattern of officials at different positions.
- It also creates transparency between the citizens and those in power at every level, reduces information asymmetry.
- Moreover lack of accountability is another cause for corruption.

How accountability can be promoted?

- People's participation (P) is also critical in preventing, detecting and reducing corruption in the system.
- Hence this formula can be rearranged as $C = M + D - A - P$.

Robert Klitgaard, "Systemic corruption is due to monopoly (M), discretion (D), accountability (A) which can be denoted in formula as $C = M + D - A$."



- Odisha declaration can enhance people's participation and more the people's participation; less is the likelihood of corruption.
- People's participation can also be increased if more information about assets of public officials is published regularly.
- The Odisha government has adopted technology and online transactions to reduce discretion.
- In the last one year alone, state government has either dismissed, removed or compulsorily retired 100's of non cooperative government servants.

What more can be done?

- Currently monitoring practices rely only on inspections, raids, intelligence reports which has to be a institutional approach in identifying targets of those inspections.
- Randomised audits using technology and artificial intelligence without any human bias in the selection of auditee can be another logical step.
- The anti-corruption exercise should promote and safeguard whistle-blowers & the existing **Whistle Blower Protection Act, 2014** needs to be operationalised.
- It can also notify a separate framework for protection of whistle-blowers.
- Those who enjoy power should also be subjected to the **Prohibition of Benami Property Transactions Act, 1988**.

6. INDIA & ITS NEIGHBORHOOD

6.1 India Out of Colombo Terminal Project

Why in news?

Sri Lanka decided to overturn tripartite agreement to develop Colombo's East Container Terminal.

What is the importance of this project?

- This project was a key marker for infrastructure investment in the Sri Lanka, where Chinese projects are most prominent.
- More than 2/3rd of trans-shipment at this port is tied to India, making it an important trade and connectivity link.
- Joint venture between India and Japan to invest in the ECT project provides South Asia with viable and sustainable alternatives for financing and development.

Why was this project overturned?

- This was due to growing pressure from port union groups which opposed any foreign participation.
- It is worrying that whether the country will honour the commitments made by the previous government.
- Also there is suspicion that there is a Chinese hand behind this decision & it is curious that despite Sri Lanka's financial difficulties it took this decision upsetting donors.

How has India responded to this?

- It continues to engage Sri Lanka on the ECT issue but it remains silent on Colombo's alternative offer of developing the West Container Terminal.
- Over the past years, Indian government has invested much time and resources Sri Lanka- new credit line, currency swap agreement, COVID-19 assistance and vaccines.
- NSA Ajit Doval and EAM S. Jaishankar have visited Colombo more than once and Mr. Modi has hosted President Gotabaya and Prime Minister Mahinda.
- India has also set much store by its partnership with Japan as a counter to China's BRI & there is much at stake for all three countries to derail the partnership.
- A compromise formula to restore a deal needs to be arrived.

6.2 Disengagement Agreement in Eastern Ladakh

Why in news?

Chinese and Indian troops on the southern and northern shores of Pangong Tso began “synchronized and organized disengagement.”

What is the significance?

- The move comes as the first major breakthrough in talks to resolve the 9 month military standoff along the Line of Actual Control (LAC) in Ladakh.
- The disengagement began in line with the consensus reached at the 9th round of China-India Corps Commander Level Meeting.

What is the new disengagement plan in eastern Ladakh?

- Troops from both sides have started disengaging from the Pangong Tso area in eastern Ladakh.
- As of now, the disengagement process seems restricted to the north and south banks of Pangong Tso.
- The process has started with the pulling back of certain columns of tanks from the south bank region by both sides.
- At the moment, there is no pullback of troops from the friction points and the heights they are positioned on.
- That will happen in a phased and verified manner.

What does this disengagement process entail?

- Both sides will remove the forward deployment in a phased, coordinated and verified manner.
- China will pull its troops on the north bank towards the east of Finger 8.
- Similarly, India will also position its forces at its permanent base at the Dhan Singh Thapa post near Finger 3.
- Actions will be taken by both the parties in the south bank area as well.
- Both sides have also agreed that the area between Finger 3 and Finger 8 will become a no-patrolling zone temporarily.
- Further, all the construction done by both sides on the north and south banks of the lake since April 2020 will be removed.
- The process will send Indian and Chinese troops back to their traditional bases on the north bank.
- While India has its traditional base at the Dhan Singh Thapa Post, just west of Finger 3, China has had its base east of Finger 8.

Why is this area important?

- The north and south banks of Pangong Tso are two of the most significant and sensitive regions when it comes to the current standoff in the Ladakh.
- The clashes here marked the beginning of the standoff, which makes the areas around the shores of the lake so sensitive and important.
- It is one of the areas where the Chinese troops had come around 8 km deep west of India's perception of the LAC.
- China had positioned its troops on the ridgeline connecting Fingers 3 and 4, while according to India the LAC passes through Finger 8.
- Further, in the south bank of the lake, Indian forces in an action in late August 2020 had gained strategic advantage by occupying certain peaks, outwitting the Chinese.
- Indian troops had positioned themselves on heights of Magar Hill, Mukhpari, Gurung Hill, Rezang La and Rechin La, which were unoccupied by either side earlier.
 - Since then, the Chinese side had been particularly sensitive.
 - This is because these positions allowed India to dominate Spanggur Gap.
 - The Spanggur Gap is a two-km wide valley that can be used to launch an offensive, as China had done in 1962.



- The positions also allow India a direct view of China's Molde Garrison.
- After this action India had also re-positioned its troops on the north bank to occupy heights overlooking Chinese positions on the north bank as well.

Why has an agreement taken so long?

- Since September 2020, China has insisted that India first pull its troops back from the south bank of Pangong Tso, and the Chushul sub-sector.
- However, India has been demanding that any disengagement process should include the entire region.
- It also insisted that the troops should go back to their April 2020 positions.
- However, it seems that for now both sides have agreed to first disengage from the Pangong Tso area only.

What delays a permanent resolution?

- Two of the main hurdles in finding a permanent resolution are **lack of trust & lack of clarity on intent**.
- The events of 2020 have notably left enormous distrust.
- Any permanent resolution will include -
 - i. disengagement of troops from the frontlines from all friction points
 - ii. de-escalation that will entail sending the troops from the depth areas to their original bases
- Both sides have around 50,000 troops in the region, along with additional tanks, artillery and air defence assets.
- So, a resolution has to include sending these troops and military equipment where they came from.

6.3 Tamil Nadu Fishermen's Death

What is the issue?

- The news of the bodies of four Tamil Nadu fishermen washed ashore in Sri Lanka has triggered anger in coastal Tamil Nadu.
- This has again brought to the fore the issue of TN fishermen being killed by the Sri Lankan Navy.

What is the long-standing issue?

- In July 1983, there was a massive campaign against the Tamils in Colombo.
- Several hundred Tamils were killed and several thousand went into exile.
- That was the starting point of the influx of Tamil refugees to India through the Palk Strait.
- It was also the time when the militant groups demanding a separate state of Tamil Eelam were gaining popularity among both the Tamils of Sri Lanka and Tamil Nadu.
- India was providing training to different militant groups on Indian soil.
- It is against this backdrop that Sri Lankan personnel opened fire on the Indian fishermen in August 1983.
- In the event, one fisherman from Ramanathapuram district of Tamil Nadu was killed.

What are the conflicting views?

- Fishermen, from both the countries, crossing borders were common which might happen by mistake or intentionally for a better catch.
- But this had never been an issue until 1983.
- So, the killing of a fisherman was seen in Tamil Nadu as a reaction to the move by India to support the Tamil militant groups.
- It was also seen as a move to stop the Tamil refugees from travelling to India.
- But Sri Lanka stated that their navy opened fire because the Indian fishermen had crossed into their waters.

How serious has the issue evolved?

- More such incidents continued, and the Indian fishermen from Tamil Nadu were attacked by the Sri Lankan navy too often.
- Some media reports claim that more than 500 fishermen were killed from 1983 onwards.
- The TN government in one of its submission to the Madurai bench of the Madras High Court has submitted that 83 fishermen were killed from 1991 to 2011.
- An MP from TN has recently mentioned in his submission in the Rajya Sabha that 245 Indian fishermen have been killed by Sri Lankan personnel over the decades until now.
- This is only those who were killed while in water.
- Apart from those killed, the condition of those who have survived injuries is precarious.

What does Sri Lanka's navy say?

- One of the reasons that the Sri Lankan navy gave for opening fire was that they suspected the Indian fishing boats as LTTE boats.
- But though the Sri Lankan government announced in 2009 that it has wiped out LTTE, it continues to shoot at Indian fishermen.
- Today, the reason given is that Indian trawlers are trespassing into Sri Lankan waters.
- The reasons have been changing. But the attacks continue.

What are the limitations in addressing this?

- International maritime law gives clear directions on what should be done if people are found crossing borders on the sea.
- Nowhere does the law give the authority to open fire on trespassers.
- Till today, there is no protocol or procedure specified in India on what the fishermen should do when they are surrounded or attacked by the Sri Lankan navy.

G.S PAPER III

7. ECONOMY

7.1 Digital Services Tax

Why in news?

United States Trade Representative (USTR) reported that India's DST is discriminatory & inconsistent with international tax principles.

How does India's DST evolved?

- In 2016, **Akhilesh Ranjan Committee** suggested to create a level-playing field between online businesses and brick-and-mortar businesses.
- Since digital businesses don't have physical presence but enjoy a sustainable economic presence they need to be taxed.
- In 2016, India became the first country to implement the equalisation levy, on advertising services at 6%.
- In 2018, India introduced the term significant economic presence in Income Tax Act.
- According to which, if a company had users in India, it sort of defined its economic connection with India and therefore gives India the right to tax.

Digital Service Tax

Digital companies are not adequately taxed because they don't have a physical location in the markets where they operate.

DST aims to ensure that non-resident, digital service providers pay their fair share of tax on revenues generated in the Indian digital market.

- In 2020, the new equalisation levy expanded its scope even to e-commerce.

How India's DST different from U.K.?

- India's equalisation levy was on company's revenue rather than on profits but U.K. allows companies not to pay any tax if their net operating margin is negative.
- If an Indian user located in the U.K., receiving services from a U.S. company, U.K. DST contemplates that only 50% of the revenues from such a transaction would be chargeable to U.K.
- In U.K., DST excludes companies that sell their own inventories but India's equalisation levy covers everything under the sun.
- This makes U.K. different from India on its implementation but U.S. also looks at the U.K. taxes in some way as discriminatory.

Is India's DST discriminatory?

- USTR reports find DST as discriminatory because tax incident by design is on non-resident company's levy.
- But the market itself is dominated by U.S. firms hence it finds discriminatory but reality is not so.
- Moreover the threshold that India has laid down for the equalisation levy is actually much below what the EU envisages.
- Moreover the levy aims to create a level-playing field with ordinary businesses have a physical presence & pay regular taxes.
- Now international communities are moving towards a scenario where such transactions need to be taxed.
- Hence to say that levy violates international tax principles is not valid.

7.2 Regulating NBFC's

Why in news?

Recently, RBI has released the draft NBFC norms to tighten the control over the sector.

What are the features in the draft norms?

- It suggests classifying NBFCs into 3 layers based on size and activity- base layer, middle layer and upper layer so that they can be subjected to different degrees of regulation.
- The minimum capital requirement for NBFC licences are increased from 2 crore to 20 crore & all NBFCs with less than Rs 1,000 crore assets, P2P lenders will come under base layer.
- They won't be subjected to cash reserve ratio and statutory liquidity ratio & will follow 90-day NPA recognition norm and raised disclosure standards.
- Appointment of a Chief Compliance Officer (CCO) for following the rules is recommended.

What can we infer from these draft norms?

- The RBI has reserved its most stringent rules for the upper layer NBFC's who will be subjected to capital, provisioning and exposure rules identical to or even more stringent than banks.
- The middle layer which made up of large NBFCs, deposit-taking firms, housing finance firms will see tighter loan exposure norms, 3-year auditor rotation and Basel Pillar-III disclosures.
- It acknowledges that weak governance was the root cause for DHFL and IL&FS crises and proposed new rules for board composition, compensation and auditor appointment.
- However this may not pose much hardship to established players.

What are the positive aspects in the draft?

- There are around 9000 entities ranging from MFIs to infrastructure finance companies and scale-based regulation can give greater oversight and regulation.
- Draft norms acknowledge that too much regulation can stifle the growth of smaller firms which might hamper last-mile credit delivery.



- Hence proposed norm kept 9,209 of the 9,425 non-deposit taking NBFCs to fall in the base layer thereby majority of the existing NBFCs may get away with lighter regulations.
- NBFC's which were not following the rules especially under governance have to work hard to comply with the new framework.
- Appointment of CCO ensures FI's comply with the norms in true spirit and ensures that authority has the right to demand and get information from the management as and when required.

What are the negative aspects of the draft?

- It still continues to focus wholly on the systemic risk aspect of NBFC failures ignoring the risks to consumers from proliferating non-banks.
- Nowadays digital lending apps are tying up with small NBFCs to indulge in a range of dubious lending practices.
- Hence if small NBFCs are inadequately supervised they can cause serious damage to the system.
- More regulatory requirements can make companies to circumvent them.
- Hence it is challenging to ensure that all the rules are complied especially if the CCO is an internally appointed person as even in professionally-managed FIs these rules are avoided.
- It has been noticed that in all cases of failure in the financial sector, the issue was not the absence of regulation but the compliance part.

7.3 One-Person Company

Why in news?

In the Budget speech, Finance Minister announced measures to ease norms for setting up one-person companies.

How many OPCs does India have?

- According to data by Monthly Information Bulletin on Corporate Sector, there are 34,235 OPCs out of a total number of about 1.3 million active companies in India, as of 2020.
- The number of OPCs was 2,238 as of 2015 & more than half of the OPCs are in business services.

How does single-person Company and sole proprietorship differ?

- In single-person Company, the person and the company are considered separate legal entities whereas in sole proprietorship, the owner and the business are considered the same.
- This has an important implication when it comes to the liability of the individual member or owner.
- In a one-person company, the sole owner's liability is limited to that person's investment but in sole proprietorship set-up, the owner has unlimited liability.

One-Person Company

- It is a company that is formed by just one person as a shareholder in contrast to private companies which require minimum of two members to get going.
- This is helpful to the person wants to get into business through his sole proprietorship mode but they are considered as private companies only.

What are the changes announced in the budget for these companies?

- The 2014 rule states that OPCs would cease to have that status if its paid-up share capital exceeds Rs 50 lakh or its average turnover for the preceding three years exceeds Rs 2 crore.
- This condition was lifted in this budget.
- Earlier only an Indian citizen and an Indian resident could start a single-person company.
- Now it is proposed that residency limit for an Indian citizen to set up an OPC will be reduced from 182 days to 120 days & NRIs are now allowed to incorporate OPCs in India.
- These changes come along with the proposal to increase the threshold of capital base from Rs 50 lakh to Rs 2 crore & turnover from Rs 2 crore to Rs 20 crore for small companies.



- This means that these companies can have easy compliance requirements for longer time & will address the existing criticism that erstwhile rules governing OPCs are restrictive in nature.

7.4 Fuel Prices

Why in news?

Recently, the retail prices of automobile fuels have reached record highs across the country.

Why are consumers in India paying more for petrol and diesel?

- In theory, retail petrol and diesel prices are linked to global crude oil prices i.e. that if crude prices fall, retail prices should come down.
- But this does not happen in practice, largely because oil price decontrol is a one-way street in India.
- So, when global prices go up, the resultant increase is passed on to the consumer but when the reverse happens government slaps fresh taxes and levies.
- This ensures the state gets extra revenues but the consumer, who should have ideally benefited, is forced to spend more.

Why are crude oil prices rising now?

- In April 2020 after the pandemic struck, prices collapsed as the demand fell down.
- But when economies relaxed travel restrictions and factory output picked up, global demand got improved and prices started recovering.
- Brent crude, which was trading at about \$40 per barrel between June and October, started rising in November and has gone past the \$60 per barrel mark after the rollout of Covid-19 vaccines.
- The controlled production of crude by OPEC Nations amid rising demand has been another key factor in boosting oil prices.

What is the impact of taxes on retail prices of auto fuels?

- Currently, state and central taxes amount to around 180% of the base price of petrol and 141 % of the base price of diesel in Delhi.
- Central government hiked its excise duty on petrol & diesel to boost its revenues as economic activity fell during pandemic.
- A number of states have also hiked sales tax on petrol and diesel to shore up their revenues.
- Now Industrial analysts projected cuts in central excise duty as prices hit record levels but government is not considering any proposal to cut the rates.
- Tax on fuels as a percentage of pump prices is around 65 % of the retail price in Germany and Italy, 62 % in U.K., 45 % in Japan and around 20 % in U.S.
- Besides, oil marketing companies halted daily revisions of petrol and diesel prices for 82 days starting from March 16, 2020.
- They explained that lowering prices in line with international prices will led to negative margins for oil marketing companies.

7.5 National Stock Exchange Glitch

Why in news?

Recently, trading on National Stock Exchange (NSE) got halted due to a technical glitch.

Why it got halted?

- NSE accounts for 100% of equity derivative trades and almost 90 % of cash trades in equity.
- Its trading got halted due to issues with telecom links and trade did not migrate to the disaster recovery (DR) site immediately.
- NSE said that it has multiple telecom links with two service providers to ensure redundancy.

- But all the links became unstable in the same time thereby impacting the risk management system.
- NSE reported that there was no impact on the trading system and trading hours got extended till 5 pm on the BSE, NSE and MSEI.

What was the impact of this halt?

- Since February derivative contracts will get expired in the following day, those who held derivative positions got grieved due to the uncertainty in trade resumption.
- They also suffered losses on option contracts.
- Due to the gap in communication, intra-day trading positions got forcibly sold in BSE which resulted in loss for smaller traders.

How should the Regulator respond now?

- The Regulator-SEBI should expedite the investigation behind the halt and take stern action which can act as deterrent for any future lapses.
- It should soon frame rules for compensating investors in such events.
- SE needs to be enquired why it did not communicate clearly to its investors about restart of the trading.
- A stress test needs to be carried on the exchange platforms to check whether they can handle such heavy load around the derivative expiry period.

7.6 Indian Banks Association and RTI

Why in news?

Recently, Indian Banks Association said that government cannot exercise control over its functioning.

What are the functions of IBA?

- Its major objectives are rendering assistance and providing common services to the banking industry; developing and implementing new ideas and innovations in banking services etc.
- It covers broad range of services in the banking industry and banks follow its advice in addition to RBI's regulatory guidance.
- It also makes various recommendations to the government and the RBI over various banking-related matters like treatment of non-performing assets, formation of Bad Bank, etc.
- It conducts wage negotiation with workers' and officers' unions, and signs a wage pact called Bipartite Settlements and Joint Notes which IBA claims as authorised by banks.

Indian Banks Association

- It is a representative body of management of banking in India and an association of Indian banks and financial institutions.
- Currently, it has members from public and private sector, foreign and urban co-operative banks, asset reconstruction companies, credit rating companies, credit guarantee funds etc.

What is the issue with IBA now?

- IBA claims it to be a voluntary association of member banks which is neither a governmental entity nor a regulatory authority.
- It says that it is not compliant to the writ jurisdictions of courts and not subjected to Right to Information Act, 2005.
- It has not designated any Central Public Information Officer (CPIO) till now.
- But IBA is financed by member banks and public does not know the financial status of IBA though all PSBs and listed private banks contribute to its functioning.

What does Central Information Commission (CIC) say about this?

- In **RK Jain versus Indian Banks' Association case**, CIC said that IBA qualifies to be a public authority under the RTI Act, 2005.
- This is because it performs functions as state agency and majority of its control vests in Government of India-appointed Managing Directors of public sector banks.

- Therefore it directed IBA to designate an official of the IBA as the CPIO and to comply with Section 4 of the RTI Act, 2005.
- But IBA filed a writ petition before the Delhi High Court & the Court stayed the CIC order.
- The court observed that IBA is an association of banks which has 241 members and only nine members are from public sector banks.
- It also said that case is yet to be decided whether IBA comes under RTI or not.

7.7 Bear Market

Why in news?

Recently investors sold off stocks across the board leading to fall in the stock market indices.

What led to the sell-off in Indian market?

- Earlier, US 10-year bond yield climbed to 1.614% which was highest in a year due to concerns over inflation in the country.
- Due to this US Federal Reserve had to either lower the monthly bond-buying or to hike the interest rates.
- This affected the India markets as it is the major recipient of foreign inflows.
- The rising crude oil prices and increasing geopolitical tension between US and Syria also raised concerns among the investors.
- Moreover GDP data for the 3rd quarter which is yet to be released is also adding volatility to Indian market.

How do Indian markets further respond?

- Investors will keenly monitor the data like auto sales numbers and manufacturing PMI and services PMI.
- But the rising bond yields continue to remain a key concern for equity markets worldwide despite positive statements by US Fed.
- It is expected that there will be further decline in the indices.

Is the bull market over?

- Though markets are witnessing volatile movements they are not expected to fall further.
- Indian markets have witnessed a positive performance in the earlier months due to strong foreign flows, improvement in the macroeconomic fundamentals and corporate earnings growth.
- Therefore conditions for a structural bull market remain intact in India.
- Hence long-term investors will use this opportunity to take advantage of volatility and accumulate quality businesses at reasonable valuations and price points.
- The market will gain momentum when global market gets stabilised.
- This will be achieved by maintaining accommodative monetary policy and a positive growth.

7.8 Silicon Valley Start-up Robinhood

Why in news?

- The online trading app Robinhood became a cultural phenomenon in Silicon Valley with being one of the hottest venues in the past week's retail-trading frenzy.
- But it abruptly blocked clients from purchasing shares of some companies whose stock prices had spiked dramatically and shaken up Wall Street.

How did Robinhood evolve?

- Robinhood is a trading platform operated by American financial services company Robinhood Markets Inc.
- It is a broker-dealer registered with the United States Securities and Exchange Commission.
- The company is headquartered in Menlo Park, California.



- It was founded in April 2013 by Vladimir Tenev and Indian American Baiju Bhatt.
- Both of them are now co-chief executive officers of the company.
- Robinhood's revenue comes from interest earned on customers' cash balances, margin lending and selling order information to high-frequency traders.
- The platform is believed to have had 13 million users in 2020.
- It came with a promise to wrest the stock market away from Wall Street's traditional gatekeepers and "let the people trade."

What happened now?

- Many of the small investors were on a mission to challenge the dominance of Wall Street.
- They thus used Robinhood's free trades.
- Investors on Robinhood, who had been buying up options and shares of GameStop, a video game retailer, enlarged those bets.
- Rampant speculation on options contracts helped drive the rise of GameStop's shares from about \$20 on January 12, 2021 to nearly \$500 in less than 20 days.
- Investors also began making big trades in other stocks, including AMC Entertainment.
- The trade frenzy thus morphed into a crisis.

What did the firm do?

- As the trading mania grew, the financial system's risk reduction mechanisms kicked in.
 - The mechanism is managed by obscure entities at the center of the stock market called clearinghouses.
- This forced Robinhood to find emergency cash to continue to be able to trade.
- It had to stop customers from buying a number of heavily traded stocks and draw on a more than \$500 million bank line of credit.
- The company also took an emergency infusion of more than \$1 billion from its existing investors.

What was the clearinghouse's role?

- One institution that tripped up Robinhood in the recent episode is a clearinghouse called the Depository Trust & Clearing Corp (DTCC).
- It is owned by its member financial institutions including Robinhood.
- The DTCC clears and settles most stock trading, essentially making sure that the money and the shares end up in the right hands.
 - Options trades are cleared by another entity.
- But the DTCC's role is more than just clerical.
- Clearinghouses are supposed to help insulate a particular market from extreme risks.
- It does this by making sure that if a single financial player goes broke, it doesn't create a contagion.
- To do its job, the DTCC requires its members to keep a cushion of cash that can be put toward stabilizing the system if needed.
- When stocks are swinging wildly or there's a flurry of trading, the size of the cushion it demands from each member, known as a margin call, can grow on short notice.
 - In the recent event, the DTCC notified its member firms that the total cushion, which was then \$26 billion, needed to grow to \$33.5 billion, within hours.
 - As Robinhood customers were responsible for so much trading, it was responsible for footing a significant portion of the bill.
- The DTCC's demand is not negotiable.



- A firm that cannot meet its margin call is effectively out of the stock trading business because DTCC will not clear its trades any more.
- For a start-up like Robinhood, generating additional hundreds of millions of dollars on short notice is a big deal.

What was the response?

- The company ended up creating risk for their customers and systemic risk for the market more broadly.
- Users flooded online app stores with hurtful reviews, with some accusing Robinhood of doing the bidding of Wall Street.
- Others sued the company for the losses they sustained.
- On the other hand, even as Robinhood's actions angered existing customers, it was winning new ones.
- The Securities and Exchange Commission said that it would closely review any actions that may "disadvantage investors or otherwise unduly inhibit their ability to trade certain securities."
- While Robinhood arranged for the needed cash from its credit line and investors, it limited its customers from buying GameStop, AMC and other shares.
- Allowing its investors to sell the volatile stocks, but not buy them, reduced Robinhood's risk level and helped it meet requirements for additional cash.
- Notably, the deposit requirements had increased tenfold during the week.

What was unique with Robinhood and what impact did this create?

- The two who created the company in 2013 said from the beginning that their focus was on "democratizing finance" by making trading available to anyone.
- To do so, the company has repeatedly employed a classic Silicon Valley formula of user-friendly software, brash marketing and a disregard for existing rules and institutions.
 - E.g. online brokers had traditionally charged around \$10 for every trade
 - But Robinhood said that customers of its phone app could trade for free.
 - The move drew in hordes of young investors.
- Robinhood also popularized options trading among new investors.
 - An option is generally cheaper than buying a stock outright.
 - But options trading has the potential to lead to much bigger and faster gains and losses.
 - This was why regulators and brokers have traditionally restricted trading in these financial contracts to more sophisticated traders.
- In building its business this way, the company disregarded academic research.
- It thus ignored propositions showing how frequent, frictionless trading generally does not lead to good financial outcomes for investors.

7.9 On Retail Inflation

What is the issue?

- India's retail inflation - Consumer Price Index (CPI) - slowed to a 16-month low of 4.06% in January 2021.
- However, various factors make the inflation outlook for the coming months less encouraging.

What is the inflation scenario?

- Inflation appears to have cooled after having stayed stubbornly stuck above the RBI's upper tolerance threshold of 6% for six months through November 2020.
- The latest retail inflation readings offer monetary authorities a fair amount of comfort.

What was the driving factor?

- The deceleration was helped by an appreciable softening in food prices.

- Specifically, the Consumer Food Price Index reflected a gain of a mere 1.89% in January 2021.
 - vegetable prices saw a disinflation of 15.8%
 - cereal prices eased considerably for a second month in the wake of kharif crop arrivals
- The RBI in its recent monetary policy statement, cited the below as factors that augured well for the months ahead-
 - i. the bumper kharif crop
 - ii. rising prospects of a good rabi harvest
 - iii. larger winter arrivals of key vegetables
 - iv. softer egg and poultry demand on avian flu fears

What is the need for caution though?

- **Food costs** - The central bank was mindful of the risks too. This is especially with regard to food costs.
- The latest data on this had brought to the fore concerns over the prices of pulses and edible oils.
 - While inflation in pulses and products was at 13.4%, that for oils and fats stood at 19.7%.
 - Eggs, and meat and fish, both posted double-digit rates of 12.9% and 12.5%, respectively.
- **Base effect** - Inflation moderated by more than 100 basis points in February 2020 to 6.58% before slowing to 5.84% in March 2020.
- This favourable base effect is also beginning to wane.
- So, the outlook for the coming months is far from reassuring.
- **Input cost** - Of particular worry is the trend in input costs for multiple sectors in the real economy, including manufacturing.
- From automobile manufacturers to builders, rising raw material costs are beginning to force them to pass on the impact to the end consumers.
- And this is going on when demand is yet to pick speed.
- The latest Purchasing Managers' Index (PMI) points to the sharpest increase in purchasing costs for more than 2 years.
 - This is because of the continuing supply-side squeeze.
 - The resulting inflationary pressures made manufacturers to raise their product prices at the fastest pace in over a year.
- **Fuel price** – Adding to the above concerns is the rising transportation fuel prices to newer and newer record highs in recent days.
- Diesel, the main fuel for freight carriage, has now exceeded Rs.80 per litre.
- This is bound to feed into prices of almost everything being transported across distances.
- With this, the outlook for inflation becomes distinctly darker.
- Policymakers need to maintain a strict vigil to keep inflation from resurging and posing a threat to macro-economic stability.

8. INFRASTRUCTURE

8.1 Ageing Indian Dams

What is the issue?

India's ageing dams can threaten water security, affect farmers' income, and increase flooding.



How old are Indian dams?

- India is ranked 3rd in the world in terms of building large dams.
- Of the over 5,200 large dams built so far, about 1,100 large dams have already reached 50 years of age and some are older than 120 years.
- The number of such dams will increase to 4,400 by 2050 which means that 80% of the nation's large dams face the prospect of becoming outdated as they will be 50 years to over 150 years old.
- Krishna Raja Sagar dam was built in 1931 and is now 90 years old and Mettur dam was constructed in 1934 and is now 87 years old.
- Moreover hundreds of thousands of medium and minor dams are even more hazardous as their shelf life is even lower than that of large dams.

What are the other worrying facts about the dams?

- As the dams get older, soil replaces the water in the reservoirs and the storage capacity cannot be claimed to be the same as it was in the 1900s and 1950s.
- In a paper, 'Supply-side Hydrology: Last gasp', published in 2003, reveals that the observed siltation rate in India's iconic Bhakra dam is 139.86% higher than originally assumed.
- At this rate, the Bhakra dam is now expected to function for merely 47 years, virtually halved from the original estimate of 88 years.
- Similarly, the actual siltation rate observed for the Hirakud, Maithan and Ghod dams are way higher at 141.67%, 808.64% and 426.59%, respectively.
- Studies in later years showed the similar findings which establish the fact that Indian reservoirs are designed with a poor understanding of sedimentation science.
- The designs underestimate the rate of siltation and overestimate live storage capacity created.
- Therefore, the storage spaces in Indian reservoirs are receding at a rate faster than anticipated and reservoirs are expected to become extinct in less than a few decades.

What are the consequences of the siltation?

- Siltation disrupts the supply of water flow & cropped area begins to receive less and less water as time progress.
- The net sown water area either shrinks in size or depends on rains or groundwater, which is over-exploited.
- Crop yield gets affected severely and disrupts farmer's income & farmer's income may get reduced.
- The flawed siltation rates demonstrate that the designed flood cushion within several reservoirs across many river basins may have already depleted substantially.
- Hence floods are becoming more frequent in downstream of dams.

9. AGRICULTURE

9.1 New Paradigm in Animal husbandry

What is the issue?

Infrastructure investments in animal husbandry and dairy sector can boost productivity levels in farming.

What is Animal Husbandry Infrastructure Development Fund (AHIDF)?

- The fund was set up with an outlay of Rs 15,000 crore and eligible entities will get an interest subvention of 3% for a loan amount which covers up to 90% of the estimated project cost.
- Through the Udyami Mitra Portal, applicants need to submit the proposal with the complete Detailed Project Report.
- This fund was announced when the country was reeling under COVID-19 and subsequent lockdowns in order to give cushion to economy.

- This is the first major fund launched by the government that includes diverse stakeholders- FPOs, private dairy players, individual entrepreneurs and non-profits in its ambit.

How can AHIDF boost dairy sector?

- Currently there is an infrastructure gap of about 120-130 MMT and there is a need to enhance chilling infrastructure in order to prevent wastage of milk.
- If this infrastructure gap is addressed, then the overall potential investment opportunity in the dairy value chain will be Rs 1, 40,000 crore.
- AHIDF can establish animal feed plants of varying capacities – including setting up of mineral mixture plants, silage making units, and animal feed testing laboratory.
- In order to spur innovations, Ministry has collaborated with Invest India to get ideas from domestic start-ups for developing new varieties of green fodder and enriched animal feed.
- This can increase the productivity of cattle by enhancing the quality of animal feed and can translate into an investment potential of around Rs 5,000 crore.

How can AHIDF boost the poultry sector?

- India is the fourth largest chicken meat producer and the second largest egg producer in the world.
- In the anganwadis, eggs are given as part of the mid-day meal and upgrading the poultry infrastructure can mitigate rampant malnutrition.
- Chicken meat also provides cheap source of protein per unit.
- Moreover enhanced infrastructure can make processing units more energy-efficient and mitigate carbon footprint.

What are the takeaways from this?

- Animal husbandry and dairy sector collectively employs more than 100 million people and bulk of the establishments in this sector are concentrated in rural India.
- AHIDF has the potential to create 30 lakh jobs, overhaul domestic infrastructure & make India to attain greater prominence in the global value chain of dairy and livestock products.
- If such investments are made in a timely manner, it can bring immense benefits for the entire economy.

9.2 Fuel Prices & Farmers

Why in news?

The rising prices of petrol and diesel are set to increase the input cost of farming sector by 28 % compared to last year.

How will fuel price rise affect the input cost of agriculture?

- In Punjab, 11 lakh farm households own 5.20 lakh tractors, 17,000 combine harvesters which includes 6,000 Straw Management System (SMS).
- Apart from this, the state owns 75,000 stubble management machines, over one lakh other farm implements.
- They machines harvest around 36-37 million tonnes wheat and paddy in the state annually & they are diesel operated.
- Apart from this there are 1.50 lakh diesel operated tube wells too in the state.

How much diesel is consumed in Punjab in the agriculture?

- The consumption of diesel in the state is 2.5 times higher than the petrol.
- Out of total 3,400 pumps used in agriculture, 40% consume diesel and nearly 20 % consume petrol.
- The retail oil price has never got decreased when the rate of crude oil in international market fell down.
- This affects the farming sector even during Covid-19 lockdown.

What is the current fuel price in Punjab?

- In February 18, 2020, the petrol and diesel were Rs. 71. 83 per litre and Rs. 63.62 per litre, respectively.

- Currently, the price of petrol and diesel is Rs.90.51 per litre and Rs. 81.64 per litre respectively.
- So there is 28 % and 26 % rise in diesel and Petrol prices respectively in the state in one year.
- After the announced of double the farming income by 2022 in 2017, diesel price was around Rs 56 per litre including 28 % VAT + 10 % additional tax on VAT.
- Now it has gone up to Rs 81.64 per litre, an increase of Rs 25.64 per litre, which is an increase of 45.8 % in the past four years.

What will be the cost of running farm implements now?

- If one operation is taken for wheat harvesting, from coming April farmer has to spend Rs 816 per acre on diesel cost because a harvester consumes around 10 litre diesel on one acre.
- Last year, the cost was Rs 636 per acre and there is an increase of Rs 180 per acre in just one year.
- Now the field requires around 8-10 operations for sowing, harvesting, post harvesting and every operation will see an increase of 28.3 per % in diesel consumption.
- That is if the total cost of field preparation for one crop after normal combine-harvesting was Rs 3,000 per acre, now it will go up to Rs 3,800 to 3,900.
- This will add extra burden to farmers as there are 41 lakh hectares of area under cultivation for various crops in Punjab.

10. SCIENCE & TECHNOLOGY

10.1 Opening Up the Geo-Spatial Sector

Why in news?

- The Ministry of Science and Technology has released new guidelines for the Geo-spatial sector in India.
- The guidelines deregulate the existing protocol and liberalise the sector to a more competitive field.

What is the present policy on geo-spatial data?

- There are strict restrictions on the collection, storage, use, sale, and dissemination of geo-spatial data and mapping under the current regime.

Geo-Spatial Data

- *Geospatial data is data about objects, events, or phenomena that have a location on the surface of the earth.*
- *The location may be static in the short-term, like the location of a road, an earthquake event, malnutrition among children, etc.*
- *It could also be dynamic like a moving vehicle or pedestrian, the spread of an infectious disease and the like.*
- *Geospatial data combines -*
 - location information*
 - attribute information (the characteristics of the object, event, or phenomena concerned), and*
 - often also temporal information or the time at which the location and attributes exist*
- *The past decade has seen an increase in the use of geo-spatial data in daily life with various apps such as for food delivery, e-commerce and even weather apps.*



- The policy had not been renewed in decades and has been driven by internal as well as external security concerns.
- The sector so far is dominated by the Indian government as well as government-run agencies such as the Survey of India.
- Private companies need to navigate a system of permissions to be able to collect, create or disseminate geo-spatial data.
- These include permissions from different government departments (depending on the kind of data to be created) as well as the defence and Home Ministries.

What was the need for tight regulations?

- Geo-spatial data was initially conceptualised as a matter solely concerned with security.
- So, geo-spatial data collection was the prerogative of the defence forces and the government.
- The Kargil war highlighted the dependence on foreign data and the need for indigenous sources of data.
- With this, GIS mapping was also rudimentary, and the government invested heavily in it after the war.

Why is the deregulation now?

- The system of acquiring licenses or permission, and the red tape involved, can take months.
- This delayed the projects, especially those that are in mission mode, for both Indian companies as well as government agencies.
- The deregulation would eliminate the requirement of permissions as well as scrutiny, even for security concerns.
- Indian companies can now self-attest, conforming to government guidelines without actually having to be monitored by a government agency.
- More and more sectors such as agriculture, environment protection, power, water, transportation, communication, health (tracking of diseases, patients, hospitals etc) rely heavily on geo-spatial data.
- But there is a huge lack of data in the country.
 - This impedes planning for infrastructure, development, natural calamities as well as businesses which are data-based.
- Given this, the mapping of the entire country, that too with high accuracy, by the Indian government alone could take decades.
- There is thus a need to incentivise the geo-spatial sector for Indian companies and increased investment from private players in the sector.
- There has also been a global push for open access to geo-spatial sector as it affects the lives of ordinary citizens.
- The new guidelines have thus ensured such an open access, with the exception of sensitive defence or security-related data.
- Large amounts of geo-spatial data are also available on global platforms.
 - This makes the regulation of data that is freely available in other countries, untenable.

10.2 Crypto Currency

Why in news?

Recently, government said that a law will be made to regulate crypto currencies for ending the ambiguities over their usage in India.

What is Crypto currency?

- It is a digital currency that is secured by cryptography, which makes it nearly impossible to counterfeit.
- Many crypto currencies are decentralized networks based on block chain technology.



What is their existing legal status?

- The government said that such currencies are not legal tender as they are highly volatile, can be used for illicit Internet transactions & are outside the ambit of state.
- In 2018, RBI sent a circular to banks directing them not to provide services for those trading in crypto currencies but this circular was set aside by the Supreme Court.
- Court found the circular to be disproportionate & also RBI could not prove that entities are adversely impacted by these crypto currency exchanges.

Is banning such currencies a right approach?

- Smart regulation is preferable, as a ban on something that is based on a technology of distributed ledger cannot be implemented for all practical purposes.
- Even in China, where cryptocurrencies have been banned & Internet is controlled, trading in cryptocurrencies has been low but not non-existent.
- In India, inter-ministerial committee in its study found that most countries opted for regulation but it recommended an outright ban.
- Interestingly it batted for an official digital currency and promoting its underlying block chain technology.
- Hence government must regulate such currencies rather than banning them.

10.3 India & 5G

Why in news?

Parliamentary committee thinks that India may miss the roll out of 5G services as mentioned in the government's report.

What are the findings of parliamentary committee?

- It says that despite Department of Telecommunications (DoT) report that India is ready to roll out 5G as early as 2018 but there is little progress on the ground.
- Uncertainty in spectrum auctions, high reserve price of spectrum, inadequate development of test cases, low reach of optical fibre & deficient back-haul capacity are the causes for it.
- It also noted that reserve price for auction of 5G was one of the highest in the world which needs to be rationalised.
- The reserve price must take into account the per capita income of the country & reserve prices mandated by other countries.

What is the status of global countries are in implementing 5G?

- Globally, across 59 countries 118 telecom service providers have started deploying 5G networks and AT&T started its testing and deployment in early 2018.
- Verizon followed AT&T's path in expanding its 5G ultra-wide broadband services to 60 cities in the US.
- China has rolled out its 5G services which covers around 8 per cent of their population.
- But India is yet to give formal approvals for 5G testing despite all the 3 major private telecom players having submitted their applications as early as January 2020.
- Reliance Jio is ready to deploy 5G services and is waiting for a nod from the DoT and Bharti Airtel has successfully demonstrated its 5G service over a commercial network in Hyderabad.

Will India miss the 5G bus?

- Though the DoT said that 5G network will be rolled out in late 2021 or early 2022, it would mostly be only in very selected areas.
- Therefore India will continue to use 4G network for the coming 5-6 years.
- It finds that 2G, 3G, 4G deployments was late by 4 years, 10 years & 7 years respectively & sufficient preparatory work has not been undertaken for launching of 5G services in India.

- By the time 5G covers 20% of the world population, it will exclude a major portion of India hence it is likely that India is going to miss on 5G opportunities after missing the 2G, 3G and 4G bus.
- The committee suggests that India must expedite its approvals process, sort out issues such as spectrum auction, back-haul capacity, price and user test cases to catch up with other countries.

11. ENVIRONMENT

11.1 Uttarakhand Disaster

Why in news?

Various studies and reports on the flash floods in Uttarakhand are being published in identifying the cause.

Why did the flash floods occur?

- The area has seen two days of heavy snowfall & suddenly the weather became clear & little warmer.
- This has led to melting of snow & since glaciers in the area contain large amounts of debris when snow melts they carry large amounts of debris.
- This eroded everything that comes in the way thereby triggering an avalanche leading to the flash floods.

How big is the threat of such incidents continuing?

- When glaciers retreat due to rising temperatures, the snow melts but the debris remains which aids in the formation of lakes.
- Uttarakhand has 1,000 glaciers & over the years frequency of formation of such lakes has increased.
- But many glacial lake outburst flood events are not happening as in Sikkim because Uttarakhand has very steep slopes and the water manages to find a way out.
- But since the state has 1,200 big and small lakes in the high mountains, which are increasing in size, they do pose a threat of similar kinds of incidents.
- Hence it is extremely important to regularly monitor these lakes, measure the rates at which they are increasing or shrinking which needs to be incorporated into the planning process.

Why such preventive measures are not taken?

- Large numbers of glaciologists are working in the area and generating data but they lack of coordination and focus.
- Multiple scientific groups and institutions are involved, lots of data are generated but there is no coherent output.
- All these groups collect data, write reports and publish their findings but it will be forgotten until the next disaster strikes.
- Hence a nodal national agency needs to be created which can coordinate all the research and also the operational things happening in this region.

What can be done to minimise such risks?

- It is not possible to completely prevent these kinds of incidents but their potential to cause destruction can be certainly minimised.
- The Lonar lake in Sikkim is one of the largest glacial lakes & scientists have found a way to slowly drain the water in a nearby river at a regulated rate so that there is no flooding.
- Such solutions can be applied in Uttarakhand but this cannot be applied to each of the 1,000-plus lakes.
- So a detailed study needs to be conducted to identify which lakes pose maximum risk, monitor them and look for possible solutions that are suitable to local environments.
- This exercise needs to be done not just in Uttarakhand but in the entire Himalayan region.

Does large hydroelectric dams contribute to disaster?

- The hydropower projects in this area are run-of-the-river type & it is not prudent to construct dams at such heights.
- When DPR (detailed project report) for any project is done, study on glaciology is not carried out which is a major flaw.
- Hence overall environmental assessment must take into account the frequency of landslides and snow avalanches, the possibility of lake formation upstream, the ice volume in the glaciers.
- They should also find whether the glaciers are retreating or advancing and the rate at which these changes are happening.

11.2 Dams and Damages

Why in news?

The recent Uttarakhand flash flood is not a natural disaster as it claimed to be.

What is the cause for the flash floods?

- Two hydropower projects- 13.2 MW Rishiganga and NTPC's 520 MW - which are located close to Reni are found to be the cause.
- The use of explosives for dam construction, construction of other infrastructure projects such as roads in the fragile Himalayan State is the root cause.
- In June 26, 2019 Uttarakhand High Court order questioned the use of explosives on the Rishiganga site — that too for illegal mining in the name of dam construction.
- Moreover deforestation takes place when dams are constructed & compensatory afforestation norms are often flouted.
- The construction material which is supposed to be dumped on separate land is often dumped into the river which blocks the stream's nature path.

What does Chopra Committee say about in 2013 floods?

- The committee was formed in October 2013 after the Supreme Court ordered the Union Environment Ministry to constitute an expert body to assess whether dams exacerbated the 2013 floods
- The report mentions that dams aggravated the 2013 floods as riverbeds were already raised from the disposed muck at the dam construction sites.
- Hence it could not contain the sudden increased flow from floodwaters.
- It proves that dams are not only damaged in floods but also cause immense damage in downstream areas due to increase in the destructive capacity of the water.
- It suggested that 23 of the 24 proposed dam projects which it reviewed needs to be cancelled due to the potential damage they could cause.
- In an affidavit submitted on December 5, 2014 in the Supreme Court, Ministry of Environment acknowledged the adverse impact of dams in the 2013 floods.
- However, even after all these years, the matter remains pending in the Supreme Court and environmental norms for dam construction continue to be flouted in Uttarakhand.

How does climate change impact the ecosystem?

- Himalayan glaciers are receding and disintegrating due to climate change and the snow cover in the Himalayas is thinning.
- Research shows that there will be increasing number and volume of glacial lakes due to increase in temperatures.
- This means there will be rapid increase or decrease in the reservoir water level in the dams & the projections on the life of a dam reservoir may not stand due to erratic events such as floods.
- This could rapidly fill a reservoir with muck and boulders brought along with the floods.

- And there is also the threat of earthquakes as Uttarakhand lies in Seismic Zone-IV (severe intensity) and Seismic Zone-V (very severe intensity).

What can we infer from this?

- Ignoring these threats many dams are constructed as a source of revenue in zones that are under high risk of witnessing severe earthquakes.
- Now the State plans to construct up to 450 hydropower projects of 27,039 MW installed capacity ignoring the disastrous impacts of rampant dam-building.
- It is clear that dams worsen disasters which is ignored by the State authorities is unfortunate one.

12. INTERNAL SECURITY

12.1 Smart Walls

Why in news?

Recently, US President Joe Biden proposed smart wall between the U.S. and Mexico border.

What is Smart wall?

- Smart wall aims to replace the physical and armed patrolling with advanced surveillance technology.
- It is proposed to be the future of border security which could solve border security issues without the need for a physical barrier.

What are the features in the Smart wall?

- Artificial intelligence will be used at a novel scale to complement the border wall and hundreds of mobile surveillance towers would be deployed.
- Along with this, the complete system of a virtual wall consisting of a radar satellite, computer-equipped border-control vehicles, control sensors and underground sensors will be deployed.
- Thermal imaging will also be used which would help in detecting objects & it even can distinguish between animals, humans, vehicles and then can send mobile updates.
- This surveillance technology can help in detecting, tracking border break-ins & can perform most difficult tasks dedicated to border security.

How can this technology help in Indian Borders?

- India has been struggling with the problem of terrorists and smugglers infiltration.
- Indian borders have rugged terrain & some areas are not even clearly defined.
- Hence erecting fences, walls or any physical structures is extremely difficult & smart wall can supplement the ongoing efforts to secure the borders and curb cross-border infiltration.

What are the other benefits this technology provides?

- Smart wall will be designed in such a way that they can operate even in rugged areas.
- It has an edge over physical borders-- cost-effectiveness, less damage to environment, fewer land seizures and speedier deployment.
- Though it may not be feasible in long boundaries, still it can be deployed to enhance critical security establishments and complement the existing physical fencing and walls.
- Pathankot Air Force base attack which was much talked of was attacked because of the difficulty to seal the border due to its vast size.
- Hence it is imperative for Indian armed forces to be well-equipped and simultaneously have the latest technological advantage over its enemies.
- So experts must explore this idea to effectively counter the problem of cross-border infiltration in the wake of Digital India.



PRELIM BITS

13. HISTORY, ART & CULTURE

Ajmer Sharif Dargah

- Afghanistan President has sent the first ever sacred 'Chadar' to the Ajmer Sharif Dargah through its diplomatic mission in New Delhi.
- This Chadar was given during the 809th 'Urs Mubarak(Death Anniversary)' of Khawaja Gharib Nawaz, of Ajmer Sharif Dargah.
- Ajmer Sharif Dargah is a **Sufi shrine of Khwaja Moinuddin Chishti**, which was built by Mughal Emperor **Humayun**.
- Located in Rajasthan, this shrine has Chishti's grave (Maqbara) inside a white marble dome, 11 arches and Persian inscriptions.
- There are several mosques inside the dargah complex, built by Akbar and Shah Jahan, who made it a point to visit Ajmer at least once a year.

Archaeological Circles

- Archaeological Survey of India, an attached office of Ministry of Culture, established 6 new Archaeological Circles by bifurcation of its existing Circles as,
 1. Rajkot Circle (Gujarat) – by bifurcating Vadodara Circle
 2. Jabalpur Circle (Madhya Pradesh) – by bifurcating Bhopal Circle
 3. Trichy Circle (Tamil Nadu) – by bifurcating Chennai & Thrissur Circle
 4. Meerut Circle (Uttar Pradesh) – by bifurcating Agra Circle
 5. Jhansi Circle (Uttar Pradesh) – by bifurcating Lucknow Circle
 6. Raiganj Circle (West Bengal) – by bifurcating Kolkata Circle
- The step has been taken to facilitate and strengthen the process of preservation and registration of archaeological monuments.

14. GEOGRAPHY

Shivalik Elephant Reserve

- Uttarakhand government issued a stay on its earlier order to denotify the Shivalik Elephant Reserve.
- Shivalik Elephant Reserve is the premier and only elephant reserve of Uttarakhand.
- Covering both Kumaon and Garhwal regions, Shivalik ER has around a dozen elephant corridors.
- Shivalik Elephant Reserve was first identified by the central government in 1991-92 under 'Project Elephant'.
- Its objective was to arrest man-animal conflict in the region and rehabilitate elephants that were held captive.
- In 2002, Shivalik was notified through a government order by the Uttarakhand government.
- In 2003, Uttarakhand was included in the 10 MIKE (Monitoring of Illegal Killing of Elephants) sites of India.

Tropical Cyclones

- A new study has found that the tropical cyclones across the globe have been moving westward by 30 km per decade since 1982, which is putting them closer to land and making them more dangerous.



- But the Atlantic hurricane basin didn't show any westward shift, which could be because it is more closely surrounded by continents.
- The busiest tropical cyclone basin is in the western Pacific, where the westward shift is twice as big as the global average.
- Storms generally move east to west because of trade winds in the tropics, so a greater westward shift usually puts them closer to where the land is.
- Storms that form west of land, such as in the Pacific off the California and Mexican coasts, are usually moving away from land already, so this shift doesn't spare more land.
- Changes in atmospheric currents that steer storms tend to be pushing cyclones farther west, but why this is happening is still an open question.

Centre for Wetland Conservation and Management

- Indian government will establish the first Centre for Wetland Conservation and Management (CWCM) in the National Centre for Sustainable Coastal Management (NCSCM), Chennai.
- [NCSCM - An institution under the Ministry of Environment, Forest and Climate Change.]
- It would aid in the application of integrated approaches for conservation, restoration, management and wise use of the wetlands.
- It would address specific research needs and knowledge gaps, and help in building partnership and networks with relevant national and international agencies.
- It would serve as a knowledge hub and enable exchange between State/ UT Wetland Authorities, wetland users, researchers, etc.
- It would assist the national and State/ UT Governments in the design and implementation of policy and regulatory frameworks, management planning, monitoring and targeted research for its conservation.

Lithium Reserves in India

- Atomic Minerals Directorate for Exploration and Research's survey shows presence of Lithium resources in pegmatites of Marlagalla-Allapatna area, Karnataka.
- [AMD is a constituent unit of Department of Atomic Energy.]
- The Atomic Energy Act, 1962 permits AMD for exploration of Lithium in various geological domains of the country.
- To know more about lithium reserve surveys, [click here](#).

Chamoli Disaster

- A major disaster struck the Joshimath area of the Chamoli district of Uttarakhand, when a **glacier broke** after an avalanche.
- The Rishiganga Power Project had been damaged due a breach caused by the glacier in Tapovan area.
- **Reduced snowfall** in the higher elevations this winter seems to have played a major part in the disaster.
- Around 200 of the 8,800 Himalayan glacial lakes spread across countries have been classified as dangerous.
- Scientific evidence suggests that floods originating in the Himalayas are caused largely by **landslides** that temporarily block Mountain Rivers.
- The Himalayas are **warming faster** than other mountain ranges and the increased use of reinforced concrete in

Lithium

- It is a key element for new technologies and finds its use in ceramics, glass, telecom and aerospace industries.
- It is used in Lithium ion batteries, lubricating grease, high energy additive to rocket propellants, and optical modulators for mobile phones.
- It is also used as a convertor to tritium, which is a raw material for thermonuclear reactions i.e. fusion.
- The thermonuclear application makes Lithium as "Prescribed substance" under the Atomic Energy Act, 1962.

building construction is likely to create a heat-island effect and thus add to regional warming.

National Atlas & Thematic Mapping Organisation

- National Atlas and Thematic Mapping Organization (NATMO), Kolkata is a subordinate department under the Department of Science & Technology.
- It is a sole national agency with the responsibility to depict national framework data in the form of thematic maps and atlases to cater the various needs of different sectors.
- It has the largest repository of spatial and non-spatial data processed with greater accuracy.
- Main functions of this organization are :
 1. Compilation of the National Atlas of India in Hindi, English and other regional languages.
 2. Preparation of thematic maps based on socio-economic, physical, cultural, environmental, demographic and other issues.
 3. Preparation of maps/atlas for visually impaired.
 4. Digital mapping and training using remote sensing, GPS and GIS technology.
 5. Cartographic and geographical researches at national level.

Dhubri-Phulbari Bridge

- A 19-km-long four-lane Bridge between Dhubri (Assam) and Phulbari (Meghalaya) will be constructed over the river Brahmaputra on NH-127B.
- Once completed in 2028, it will be India's longest bridge. This bridge will reduce travel distance between Assam and Meghalaya from 200 km to 19 km.
- Through this bridge, Assam and Meghalaya will have a direct connection with West Bengal.
- It will provide a third alternative link to Meghalaya, Manipur, Mizoram, Tripura and Barak valley region of Assam with the rest of the Country.

15. POLITY

Judicial Appointments

- The Supreme Court urged the central government to set a fixed timeline for clearing appointments of judges to the apex court and the high courts, after receiving the recommendations of the collegium.
- [For Supreme Court, the collegium comprises the Chief Justice of India (CJI) and **four** other most senior Supreme Court judges.
- For High Court, the collegium comprises the Chief Justice of India (CJI) and **two** other most senior Supreme Court judges.]
- This ruling was given taking a grim view of the situation where some proposals about appointments remain pending before the government.
- In 2015, the top court struck down the National Judicial Appointments Commission (NJAC) Act and the 99th Constitutional Amendment, which sought to give the executive a say in the appointment of judges.
- It had held that judicial appointments will be carried on by the recommendations of the collegium.

Panchayat (Extension to the Scheduled Areas) Act, 1996

- The Statue of Unity Area Development and Tourism Governance Act, 2019 (SoU Act) is not in consonance with the Panchayat Extension to Scheduled Areas (PESA) Act, 1996.
- **Statue of Unity Act, 2019** was enacted to develop the area around the statue of Sardar Vallabhbhai Patel in the Narmada district of Gujarat.

- It empowers the Gujarat government to establish a tourism authority for development of infrastructure and promote tourism.
- The entire Narmada district is a Schedule V area where PESA Act and Gujarat PESA Rules of 2017 are applicable.
- **PESA Act, 1996** was enacted by the Parliament, based on the Bhuria Committee report (1995), to cover the “Scheduled Areas” that were not covered in the 73rd Constitutional Amendment Act.
- It came into force in 10 states - Andhra Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and Telangana.
- It extends the provisions of Part IX of the Constitution to the Scheduled Areas of the country.
- Ministry of Panchayati Raj is the nodal Ministry for implementing PESA in the States.
- PESA brought powers further down to the Gram Sabha level for people living in scheduled areas.
- Every Gram Sabha shall be competent to preserve the traditions and customs of the people, their cultural identity, community resources and the customary mode of dispute resolution.

Delimitation Commission

- In the Delimitation Commission meeting, an overview on the process of delimitation based on the Jammu and Kashmir Reorganization Act, 2019 and Delimitation Act, 2002 was presented in order to conduct the delimitation exercise in the UT.
- **Delimitation Act, 2002** was enacted to set up a Delimitation Commission for the purpose of effecting delimitation on the basis of the 2001 census.
- The Act sought to lay down certain guidelines as to the manner in which such delimitation would be undertaken.
- The Delimitation Commission would re-fix the number of seats for the Scheduled Castes and the Scheduled Tribes based on the 2001 census, without affecting total number of seats based on the 1971 census.
- It was given the task of carrying out delimitation of Parliamentary and Assembly constituencies.
- This delimitation would apply to every general election and to every by-election to the House of the People or a State Legislative Assembly held after the final orders of the Commission are published.

Major Port Authorities Bill, 2020

- The Bill aims at decentralizing decision making and to infuse professionalism in governance of major ports.
- It is more compact in comparison to the Major Port Trusts Act, 1963 and it will empower the Major Ports to modernize and expand port infrastructure, and facilitate trade and commerce.
- Tariff Authority for Major Ports (**TAMP**) can now fix tariff, which will act as a reference tariff for bidding for PPP projects.
- The proposed **Adjudicatory Board** would carry out the residual function of the erstwhile TAMP for Major Ports, to look into disputes between ports and PPP concessionaires, etc.
- A simplified composition of Board of Port Authority (BPA) with professional independent Members has been proposed.
- BPA can fix the scale of rates for other port services and assets including land; enter into contracts, planning and development; fix tariff except in national interest, security and emergency arising out of inaction and default.
- Provisions of CSR & development of infrastructure by Port Authority have been introduced.

Cryptocurrency and Regulation of Official Digital Currency Bill, 2021

- It aims to create a facilitative framework for creation of the **official digital currency** to be issued by the Reserve Bank of India, and also **prohibits private cryptocurrencies** in India.
- However, it allows for certain exceptions to promote the underlying technology of cryptocurrency and its uses.

- The bill was brought as the regulatory bodies like the RBI and SEBI do not have any legal framework to directly regulate cryptocurrencies.
- This lack of legal framework is due to the fact that the cryptocurrencies are not currencies, assets, securities or commodities issued by identifiable users.

Amendment to Government of India Rules, 1961

- An amendment to the Government of India (Allocation of Business) Rules, 1961 has been notified.
- This amendment would enable the Ministry of Road Transport and Highways to look after the development of Ropeways and Alternate Mobility Solutions for urban, hilly and last mile connectivity.
- The Ministry will also have the responsibility of regulation, construction, research, and policy in this area.
- Formulation of institutional, financial, and regulatory framework for the technology will also fall under the ambit of this move.

Prevention of Insults to National Honour Act, 1971

- Under The Prevention of Insults to National Honour Act, 1971, UP Police had booked the relatives of a farmer whose corpse had been draped in the national flag.
- As per the Act, disrespect to the National Flag includes, among other things, using it as a drapery in any form whatsoever except in State funerals or armed forces or other para-military forces funerals.
- Prevention of Insults to National Honour Act penalises,
 1. The desecration of or insult to national symbols, such as the National Flag, the Constitution, National Anthem, and Indian map,
 2. Contempt of the Constitution of India.
- Section 2 of the Act says that whoever insults the National Flag or the Indian Constitution shall be punished with imprisonment for a term which may extend to **three years**, or with **fine**, or with both.

Information Technology Rules 2021

- Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 has been framed under the Information Technology Act, 2000, and it supersedes the IT Rules, 2011.
- It will ensure a harmonious, soft-touch oversight mechanism in relation to social media platform, digital media and OTT platforms etc.
- Part- II of these Rules to Social Media shall be administered by Ministry of Electronics and IT.
 1. These Rules empower the users of digital platforms to seek redressal for their grievances on infringement of their rights.
 2. If due diligence is not followed by the intermediaries, including social media, safe harbour provisions will not apply to them.
 3. Grievance Officer, appointed by intermediaries, shall acknowledge the complaint within 24 hours and resolve it within 15 days.



Flag Code of India

- The Flag Code of India, 2002 reads that the Flag shall not be used as a drapery in any form whatsoever except in State / Military / Central Paramilitary Forces funerals hereinafter provided.
- It also says that on the above occasions too, the flag shall be draped over the bier or coffin with the saffron towards the head of the bier or coffin.
- The Flag shall not be lowered into the grave or burnt in the pyre.
- The flag can only be used during a funeral if it is accorded the status of a state funeral.
- The state funerals are held when people below pass away,
 1. Police and armed forces,
 2. Ex- or Current holders of office President, Vice-President, PM, Cabinet Minister, CM.
- The status of a state funeral can be accorded in case of death of people not belonging to the above-mentioned categories by state government.





4. Ensures online safety and dignity of users, especially women, by removing or disabling the contents within 24 hours of receipt of complaints of contents.
 5. A distinction between social media intermediaries and significant social media intermediaries is made, based on the number of users.
 6. Chief Compliance Officer shall be appointed for ensuring compliance with the Act and Rules.
 7. Nodal Contact Person shall be appointed for 24x7 coordination with law enforcement agencies.
- Part-III on Ethics Code in relation to digital media shall be administered by the Ministry of Information and Broadcasting.
 1. This Code of Ethics prescribes the guidelines to be followed by OTT platforms and online news and digital media entities.
 2. OTT platforms would self-classify the content into 5 age based categories - U (Universal), U/A 7+, U/A 13+, U/A 16+, A (Adult).
 3. Publishers of digital news would observe Norms of Journalistic Conduct of the Press Council of India and the Programme Code under the Cable Television Networks Regulation Act.
 4. A three-level grievance redressal mechanism has been established under the rules with 3 levels of self-regulation.

16. GOVERNMENT INITIATIVES

STARS Project

- Ministry of Education, Department of Economic Affairs (DEA), and World Bank have signed an agreement for the financial support towards the implementation of the 'Strengthening Teaching-Learning and Results for States' (STARS) Project.
- The proposed World Bank support is in the form of a results-based financing instrument called Program for Results (PforR), which will ensure state-level reforms through a set of disbursement-linked indicators (DLIs).
- STARS project will improve the quality of education for the identified states - Himachal Pradesh, Rajasthan, Maharashtra, Madhya Pradesh, Kerala, and Odisha.
- It will improve the overall monitoring and measurement activities in the Indian school education system.
- It will draw on the existing structure under Samagra Shiksha. At the state level, the project will be implemented through the integrated State Implementation Society (SIS) for Samagra Shiksha.
- A State Incentive Grant (SIG) will encourage states to meet desired project outcomes. The SIG matrix has been aligned with the intermediate outcome indicators as per the requirement of PforR.
- An independent verification agency (IVA) will verify each result before disbursement of funds. To know more about STARS Project, [click here](#).

SAKSHAM

- SAKSHAM (Shramik Shakti Manch) is an initiative of Technology Information, Forecasting and Assessment Council (TIFAC).
- It is a **dynamic job portal** for mapping the skills of Shramiks (Labourers), which will help in identifying skill proficiency level and development of Skill Cards for Shramiks.
- It will directly connect Shramiks with MSMEs eliminating middlemen/ labour contractor.

MITRA Scheme

- The Government has proposed the Mega Investment Textiles Parks (MITRA) scheme, a game changer for the Indian Textiles Industry.
- This will create world class infrastructure with plug and play facilities to enable create global champions in exports.

- It would enable the textile industry to become globally competitive, attract large investments, boost employment generation and exports.
- Along with the Production Linked Incentive (PLI) scheme, MITRA will lead to increased investments and enhanced employment opportunities.

Jal Jeevan Mission Urban

- The Union Budget 2021-22 announced Jal Jeevan Mission (Urban), which aims to bring safe water to urban households through tap connection in all statutory towns by the year **2024**.
- The need to roll out an urban mission is to ensure sustainable supply of drinking water in urban India, in line with the Centre's Jal Jeevan Mission (Rural) of 2019.
- JJM(Rural) will provide safe and adequate drinking water through individual household tap connections to all rural households in India by 2024. JJM is based on community approach to water.
- It has covered only 34% of the targeted households in rural India, which was haunted by the 'slippage' problem.
- [Slippage problem means villages or habitations covered with safe drinking water facilities slipping back to 'not-covered' status.]



One Nation One Standard Mission

- Mission "One Nation One Standard" would make India a leader in setting global benchmark standards.
- This mission was established in 2019 to ensure quality products and services to consumers in the country.
- While all areas of production and services be included in this mission, bringing a national uniformity and standardization in all kinds of public procurement and tendering can be an immediate deliverable.
- As the strength and character of the nation is often exemplified by the standards it sets for the quality of its products, this mission would be of great help in this context.
- Bureau of Indian Standards (BIS) would explore international partnerships and associations to achieve synergy in the field.

GOBAR-DHAN Portal

- Unified GOBAR-DHAN portal was jointly launched by Ministry of Agriculture; Ministry of Petroleum; Ministry of Fisheries, Animal Husbandry and Dairying; and Ministry of Jal Shakti.
- Galvanizing Organic Bio-Agro Resources Dhan (GOBAR-DHAN) scheme converts cattle dung and solid waste to compost, biogas and bio-CNG.
- It will help in keeping the village clean while increasing the income of farmers and cattle herders.
- Under this scheme, one village in every district of the country would be selected for its implementation.
- Villagers will be mobilized to create self-help groups (SHGs) and creative societies that will help in clean energy and green jobs initiative.

Warehousing Development and Regulatory Authority

- It is a Statutory Authority under the Department of Food and Public Distribution, Government of India, which was constituted in 2010 under the Warehousing (Development and Regulation) Act, 2007.
- It regulates and ensures implementation of the 2007 Act for the development and regulation of warehouses.
- It implements and regulates the Negotiable Warehouse Receipt (NWR) /electronic-NWR (e-NWR) System in the country. It also promotes orderly growth of the warehousing business.
- It consists of a Chairperson and two Members appointed by the Central Government.



KAPILA

- In 2020, the Government has launched the Kalam Program for Intellectual Property Literacy and Awareness (KAPILA) Campaign for creating Intellectual Property Literacy and patent awareness.
- The objectives of the scheme include creating awareness regarding,
 1. Intellectual Property Rights (IPR) in Higher Education Institutions (HEIs),
 2. Enabling of IP protection of inventions originating from faculty and students of HEIs,
 3. Development of Credit Course on IPR,
 4. Training program on IPR for faculty and students of HEIs and
 5. Sensitization and development of vibrant IP filing system.

PM AtmaNirbhar Swasth Bharat Yojana

- It is a new centrally sponsored scheme that caters to detection and cure of new and emerging diseases. It will,
 - a. Develop capacities of primary, secondary, and tertiary care Health Systems,
 - b. Strengthen existing national institutions, and create new ones.
- The main interventions under the scheme are:
 - a. Support for rural and urban Health and Wellness Centres;
 - b. Setting up of new integrated public health labs and public health units (PHUs);
 - c. Strengthening of the National Centre for Disease Control (NCDC);
 - d. Expansion of Integrated Health Information Portal to all States/UTs to connect all public health labs;
 - e. Operationalisation of new PHUs and strengthening of existing PHUs at Points of Entry i.e. Airports, Seaports and land crossings;
 - f. Setting up of new Health Emergency Operation Centers and mobile hospitals; and
 - g. Setting up of a national institution for One Health, new Bio-Safety Level III laboratories and regional National Institutes for Virology.
- [One Health - Regional Research Platform for World Health Organization (WHO) South East Asia Region]

Pradhan Mantri Urja Ganga Project

- A natural gas pipeline between Dobhi (Bihar) and Durgapur (West Bengal) will be laid under the Pradhan Mantri Urja Ganga Project.
- Launched in 2016, Pradhan Mantri Urja Ganga is National Gas Grid Project, which comes under the Ministry of Petroleum and Natural Gas. It is being implemented by Gas Authority of India Ltd. (GAIL).
- It is also known as Jagdishpur-Haldia & Bokaro-Dhamra Natural Gas Pipeline (JHBDPL) project.
- It envisaged laying gas pipeline in five states including UP, Bihar, Jharkhand, West Bengal and Odisha.
- It aims to provide piped LPG gas to residents of the eastern region of the country and CNG gas for the vehicles.

Meri Saheli Initiative

- It was launched as a pilot project by the Railway Protection Force (RPF) across South Eastern Railway for **security of women passengers** in trains originating in that zone.
- This initiative has been rolled over to all zonal railways across Indian Railways' network from October, 2020.
- It was launched to provide safety and security to lady passengers travelling by trains for their entire journey, as per the Section 58 of the Railways Act, 1989.
- Dedicated teams of lady RPF personnel have been formed across all zonal railways for its implementation.

National Strategic Plan for Tuberculosis

- The National Strategic Plan (NSP) for Tuberculosis (2017-25) was approved by Union Ministry for Health and Family Welfare in 2017.
- It is being implemented in the entire country with the goal of Ending TB by 2025.
- Under NSP, 20%, 22% and 24% of the funds have been earmarked for social welfare assistance for 2017-18, 2018-19 and 2019-20 respectively.

NIKSHAY Portal

- It is the web enabled **patient management system** for TB control under the National Tuberculosis Elimination Programme (NTEP).
- It is developed and maintained by the Central TB Division (CTD), Ministry of Health and Family Welfare in collaboration with the National Informatics Centre (NIC), and WHO.
- It functions as the National TB Surveillance System and enables reporting of various surveillance data to the Government of India.
- For those private sector providers who notify TB patient on Nikshay, an incentive of Rs.500 on notification and another Rs.500 for updating the patient's treatment outcome are provided.
- [Private sector Providers - Private practitioners, Hospital, Laboratory & Chemist.]

NIKSHAY Poshan Yojana

- It was launched by the Ministry of Health and Family Welfare.
- It is being implemented from 2018. It is a centrally sponsored scheme under National Health Mission (NHM).
- It provides Rs. 500 per month to all TB patients towards **nutritional support** for the duration of their treatment.
- **Beneficiaries** - Notified TB patients across all States and UTs in India.

Intensified Mission Indradhanush

- Ministry of Health and Family Welfare launched Intensified Mission Indradhanush (IMI) 3.0 and its portal.
- Focus of IMI 3.0 -Children and pregnant women who have missed their vaccine doses during the pandemic, and also people from migration areas and hard to reach areas.
- Mission Indradhanush was launched in 2014 to provide affordable and accessible healthcare to all the citizens.
- Since its first phase, Mission Indradhanush has covered 690 districts. The present 8th campaign will target achieving 90% Full Immunization Coverage (FIC) in all districts of the country.
- Every year the Universal Immunization Programme caters to the vaccination needs of 2.65 crore children and 2.9 crore pregnant women against 12 Vaccine Preventable Diseases.

Sandes

- National Informatics Centre launched an **instant messaging platform** Sandes on the lines of WhatsApp.
- Open initially only to government officers, it has now been released for the common public as well.
- This app, which is available for Android and iOS users, is a government instant messaging system (GIMS).
- It could be used by both the **central and state government officials** for intra and inter-organisation communication.
- Although there is no option to transfer the chat history between two platforms, the chats can be backed up to a users' email.
- It allows a user to mark a **message as confidential**, which will allow the recipient to be made aware the message should not be shared with others.

- Limitation -App does not allow the user to change their email id or registered phone number.

e-Chhawani Portal

- It is an online multi-tenancy central platform that aims to provide citizen-centric municipal services to the citizens across 62 Cantonment Boards.
- The residents of cantonment areas can register their civic complaints online and resolve them.
- They can get their documents like trade licence, sewerage connectivity, etc through the portal.
- **Cantonment Board**- an urban local body - was established for municipal administration for civilian population in the cantonment area.
- It is set up under the **Cantonments Act of 2006** - a legislation enacted by the Central government.
- It works under the administrative control of the **Defence Ministry** of the Central government.

E-Daakhil Portal

- E-Daakhil portal for **online redressal of consumer grievances** is now operational in 15 States/UTs.
- This portal, developed by National Informatics Centre, was launched by National Consumer Dispute Redressal Commission (NCDRC) in 2020.
- As provided in the Consumer Protection Act, 2019, the portal empowers the consumers to file the consumer complaints and payment of requisite fees online for the redressal of their complaints.
- It also facilitates the consumer commissions to scrutinize the complaints online to accept, reject or forward the complaint to the concerned commission for further processing.
- To facilitate the rural consumers for e-filing, it has been decided to integrate the Common Service Centres (CSC) with the e-daakhil portal.

Central Employment Guarantee Council

- The Central Employment Guarantee Council's (CEGC's) 23rd Meeting was held recently.
- **Chairperson** - Minister of Rural Development, Agriculture and Farmers' Welfare.
- The Council was constituted in 2006 under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), 2005.
- The Central Government has constituted this Council to discharge the functions and perform duties assigned to it by or under the provisions of the National Rural Employment Guarantee Act, 2005.
- It advises the Central Government on all matters concerning the implementation of this Act.
- It reviews the monitoring and redressal mechanism and recommends improvements required.
- It prepares annual reports to be laid before Parliament by the Central Government on the implementation of this Act.

Vigyan Jyoti Programme

- Vigyan Jyoti programme has been expanded to 50 more districts across the country for the year 2021-22, adding to the existing 50 districts.
- It encourages girls to take interest in science and build a career in Science, Technology, Engineering and Mathematics (STEM).
- It was launched by the Department of Science & Technology (DST) to create a level-playing field for the meritorious girls to pursue STEM.

Other Women-Centric Programs of DST

- Indo-US Fellowship for Women in STEMM (WISTEMM) program where women scientists can work in research labs of USA,
- Consolidation of University Research for Innovation and Excellence in Women Universities (CURIE) program to improve R&D infrastructure in women universities
- Gender Advancement for Transforming Institutions (GATI) program to develop a Charter and a framework to assess Gender Equality in STEM.



- It had been running successfully in Jawahar Navodaya Vidyalayas (JNV) since 2019.
- As a first step, it has been started at school level for girls of Class IX to Class XII to encourage them to pursue STEM courses in reputed institutions of the country.

Scheme of Fund for Regeneration of Traditional Industries

- Fifty **artisan-based clusters** were inaugurated in 18 States through the Scheme of Fund for Regeneration of Traditional Industries (SFURTI).
- Ministry of MSME is implementing SFURTI with a view to **organize traditional industries and artisans** into clusters to make them competitive and increase their income.
- The clusters are part of the government's strategy of keeping villages at the core of the economic policy.
- MSME Ministry, which funds these clusters, aims to support at least one cluster in each district in the future.
- SFURTI clusters are of two types i.e.,
 1. Regular Cluster (500 artisans) with Government assistance of up to Rs.2.5 crore and
 2. Major Cluster (more than 500 artisans) with Government assistance up to Rs.5 crore.
- Artisans are organized into SPVs - **Society** under Societies (Registration) Act, 1860; **Co-operative Society**; **Section 8 Company** or a **Producer Company** under Section 465 (1) of Companies Act, 2013; or a **Trust**.
- Under the Scheme, the Ministry supports various interventions including setting up of infrastructure through Common Facility Centres (CFCs), procurement of new machineries, design intervention, etc.
- Besides, the scheme strengthens the **cluster governance systems** with the active participation of the stakeholders.

Social Stock Exchange

- The Economic Survey 2021 highlighted the need to set up a Social Stock Exchange (SSE).
- SSE will be set up as a structure within the existing stock market ecosystem under the Securities and Exchange Board of India (SEBI).
- It would raise capital from organisations working for the realisation of a social welfare objective.
- SEBI made recommendations to include participation of non-profit organisations (NPO) and for-profit enterprises (FPE) on SSE subject to committing to minimum reporting requirements.
- It recommended standardisation of financial reporting by NPOs on SSE.
- To know more about Social Stock Exchange, [click here](#).

Indian Energy Exchange

- Indian Energy Exchange Limited (IEX) is the first and largest nationwide energy exchange platform in India, which has been operating since 2008.
- It is an automated trading platform for physical delivery of electricity, Renewable Energy Certificates and Energy Saving Certificates.
- It enables efficient price discovery and increases the accessibility and transparency of India's power market. It also enhances the speed and efficiency of trade execution.
- It is a publicly listed company with NSE and BSE, and is regulated by Central Electricity Regulatory Commission (CERC).

City Innovation Exchange

- City Innovation Exchange (CiX) platform was launched by the Ministry of Housing and Urban Affairs.
- CiX, through an 'open innovation' process, engages with innovators to design-test-deliver on solutions to pressing urban challenges.

- It brings together Citizen Organisations-Academia-Businesses-Government to co-create for the future of Urban India in a transparent and sustainable manner.
- It will ease the discovery, design & validation of solutions through a user centric process that will reduce barriers for innovators and cities to discover fitting solutions.
- It will help in the flow of ideas 'outside in and inside out', enhancing the skills and capacity required to deliver smart urban governance.
- Smart Cities Mission will partner with Startup India, Atal Innovation Mission, AGNIi and other initiatives in the Indian Innovation ecosystem.

India Urban Data Exchange

- India Urban Data Exchange (IUDX) is an open-source software platform developed by the Smart Cities Mission and the Indian Institute of Science (IISc), Bengaluru.
- It facilitates secure exchange of Smart City data amongst data platforms, 3rd party authenticated and authorised applications, and other sources.
- [This Smart City data could be monetised in the future, similar to the UPI for bank accounts and digital payments.]
- It serves as an interface for data providers and data users to share, request, and access datasets related to cities, urban governance, and urban service delivery.
- As the number of cities on IUDX expands, this will scale up to uniform sharing between data producers and data consumers across urban India.

SmartCode Platform

- It enables all ecosystem stakeholders to contribute to a **repository of open-source code** for various solutions and applications for urban governance.
- It addresses the challenges that Urban Local Bodies (ULBs) face in the development and deployment of digital applications to address urban challenges.
- The source code available on the platform will be free to use without any licensing or subscription fees, thus limiting costs to those involved with customising the code and developing a locally-relevant solution.

17. BILATERAL RELATIONS

Neptune Declaration

- Liberian Registry has become the very first ship registry to sign onto the Neptune Declaration on Seafarer Wellbeing and Crew Change, which was unveiled at the Davos summit.
- Signed by more than 500 organizations, it highlights the main actions that are required to be taken in order to resolve the crew change crisis.
- This Neptune Declaration outlines four main actions that are needful to address the crew change crisis:
 1. To recognize the seafarers as the key workers and provide them priority access to Covid-19 vaccines;
 2. To establish and implement the gold standard health protocols which are based on the existing best practice;
 3. To increase the collaboration between the ship operators and charterers to facilitate the crew changes;
 4. To ensure the air connectivity between the key maritime hubs for seafarers.

New START Treaty

- The United States has extended the New START nuclear disarmament treaty with Russia for five years, which was due to expire on February 5.



- New START treaty is the last remaining arms reduction pact between the former Cold War rivals i.e. Russia and United States.
- Signed in 2010, New START replaced the Treaty of Moscow (SORT).
- New START Treaty caps the number of nuclear warheads to 1,550 that can be deployed by both the countries.
- It calls for halving the number of strategic nuclear missile launchers.
- A new inspection and verification regime was established, replacing the SORT mechanism.

Immunity Passports

- In a bid to ease travel restrictions amid the pandemic, countries like Denmark, Israel, UK, etc have announced 'digital corona passport.'
- "Immunity Passport" or "Risk-free Certificate" would enable individuals to travel or to return to work assuming that they are protected against re-infection. It attests that its bearer is immune to a contagious disease.
- Some governments have suggested that the detection of antibodies to the SARS-CoV-2 could serve as the basis for an "immunity passport".
- With the novel coronavirus, the proposed certificates would attest one of three things: that the holder has been vaccinated; has tested negative for the virus or has recovered from it.
- Governments and organisations across the world are considering digital travel passes, through an app or digital wallet.
- This passport will tell authorities that you have been vaccinated or have tested negative for Covid, and are eligible for travel.

United Nations Human Rights Council

- The 46th Session of the United Nations Human Rights Council (UNHRC) was held recently. In this session,
 1. India took on Pakistan for releasing an Al-Qaeda terrorist.
 2. The U.S. Secretary of State said that the U.S. will seek re-election to the UNHRC for the 2022 to 2024 term.
- The 47-member UNHRC, created by the UNGA in 2006 by resolution 60/251, replaced the former UN Commission on Human Rights.
- It is an inter-governmental body that promotes and protects human rights around the globe.
- It is made up of UN Member States which are elected by the UN General Assembly. It meets at the United Nations Office at Geneva.

18. ECONOMY

Production Linked Incentive Scheme

- The Union Cabinet approved the Production-Linked Incentive (PLI) Scheme in 10 more key sectors, along with the pharmaceuticals for 9 years (2020-21 to 2028-29) and IT hardware sectors for 4 years.
- Apart from inviting foreign companies to set shop in India, it encourages local companies to set up or expand existing manufacturing units.
- It aims to give companies incentives on incremental sales from products manufactured in domestic units.
- It would boost domestic manufacturing and cut down on import bills, which would enhance India's manufacturing capabilities and exports.
- To know more about Production-Linked Incentive Scheme, [click here](#).

Specialty Steel

- Specialty Steel (Alloy Steel) contain additional alloyed materials that deliver special properties under specific conditions.
- Government has approved inclusion of 'Specialty Steel' under the Production Linked Incentive (PLI) Scheme.
- This inclusion will promote the manufacturing of 'Specialty Steel' within the country to meet the domestic demand by attracting capital investment, generate employment etc.

Green Bonds

- Green bonds are debt instruments issued by an entity for raising funds from investors and the proceeds of a green bond offering are used towards financing 'green' projects.
- In 2017, SEBI issued guidelines on green bonds including listing of green bonds on the Indian stock exchanges.
- The launch of green indices such as S&P BSE CARBONEX (2012), MSCI ESG India (2013), and S&P BSE 100 ESG Index (2017) allows passive and retail investors to invest in green companies.

Agriculture Infrastructure Development Cess

- The Budget 2021-22 has proposed a new levy, Agriculture Infrastructure Development Cess (AIDC) on 29 items.
- The purpose of the new AIDC is to raise funds to finance spending on developing agriculture infrastructure.
- New cess will be levied on 29 products - Gold, silver, as well as imported alcohol (excluding beer), imported apple, palm oil, and petrol/diesel including branded ones.
- The new cess will not raise the tax incidence for consumers as it will only offset the reduction in Basic Custom Duty (BCD), Basic Excise Duty (BED) and Special Additional Excise Duty (SAED) on unbranded and branded petrol-diesel.

Agriculture Infrastructure Fund

- Agricultural Produce Marketing Committees (APMCs) will become eligible beneficiaries of Agriculture Infrastructure Fund (AIF), a medium - long term debt financing facility.
- APMCs can use this fund for investment in viable projects for post-harvest management infrastructure and community farming assets at regulated markets (Mandis) through interest subvention and credit guarantee.
- The duration of the scheme is from FY2020 to FY2029.
- Beneficiaries - Farmers, FPOs, PACS, Cooperative Societies, SHGs, Joint Liability Groups, Agri-entrepreneurs, Start-ups, Central/State agency or Local Body sponsored Public-Private Partnership Projects, etc.
- The Scheme has provision of a National Level Monitoring Committee (NLMC), State Level Monitoring Committee (SLMC) and District Level Monitoring Committee (DLMC) to monitor the scheme progress.
- A **Central Project Monitoring Unit** would verify the applications for projects received on the AIF portal.
- But, the final authority to sanction loans after checking details and viability of the projects is with the **banks**.
- Loans are sanctioned by the National Bank for Agriculture and Rural Development (NABARD) and Commercial Banks.
- Loans are sanctioned to the projects of Primary Agricultural Credit Societies (PACS) and entities other than PACS for construction of warehouse/cold storage.

Cess

- It is a special-purpose tax levied over and above basic tax rates.
- Drawing power from **Articles 270 and 271** of the Constitution, the Centre collects cess and deposits it in the Consolidated Fund of India.
- The money collected is then transferred to a segregated fund to be used for specific purpose.
- But, this cess and surcharge money is not part of the divisible pool, from which devolution of Central taxes takes place to the States.

Micro Irrigation Fund

- Budget announcement has been made to double the initial corpus of Micro Irrigation Fund (MIF) of Rs. 5000.
- During 2018-2019, MIF with a corpus of Rs. 5000 Crore was created with National Bank for Agriculture and Rural Development (NABARD).
- Objective -To facilitate the States to mobilize the resources to provide additional incentives to farmers for incentivising micro irrigation beyond the provisions available under PMKSY-PDMC.
- [PMKSY-PDMC is the 'Per Drop More Crop' component of Pradhan Mantri Krishi Sinchayee Yojana]
- States may also access MIF for innovative integrated projects including projects in Public-private partnership (PPP) mode depending on State specific requirements.
- Government of India provides 3% interest subvention on loans extended to State Government under MIF.

Per Drop More Crop

- It is a Centrally Sponsored Scheme that focuses on enhancing water use efficiency at farm level through Micro Irrigation.
- It is implemented in all States from 2015-16 by the Department of Agriculture, Cooperation & Farmers Welfare.
- It supports micro level water storage or water conservation/management activities to supplement source creation for Micro Irrigation.

Startup India Seed Fund Scheme

- Startup India Seed Fund Scheme (SISFS) has been approved for the period of 4 years starting from 2021-22.
- [Seed Funding is a very early investment to a business to help it grow.]
- It will provide seed funding to eligible startups through eligible incubators across India, with effect from 1st April 2021.
- It will provide financial assistance to start ups for proof of concept, prototype development, product trials, market entry and commercialization.

Occupational Safety, Health and Working Conditions Code

- NITI Aayog has constituted a sub-group to prepare a National Action Plan for Migrant Workers.
- The Occupational Safety, Health and Working Conditions Code, 2020 (OSH Code) Act has subsumed the Inter-state Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979.
- It provides for decent working conditions, grievances redressal mechanisms, minimum wages, protection from abuse and exploitation etc.,
- It also provides for enhancement of the skills and social security to all categories of organised and unorganised workers including Migrant workers.
- The relevant provisions of the Code are applicable to every establishment in which 10 or more inter-state migrant workers are employed or were employed on any day of the preceding 12 months.

Accredited Investor

- Securities and Exchange Board of India (SEBI) has proposed to introduce the concept of 'accredited investors' in the securities market.
- Accredited investors (Qualified investors or Professional investors) are those who have an understanding of various financial products and the risks and returns associated with them.
- They are able to take informed decisions regarding their investments and are recognised by many securities and financial market regulators globally.
- SEBI said the accreditation once granted shall be valid for a year.
- The accreditation may be carried out via 'Accreditation Agencies' which may be the market infrastructure institutions or their subsidiaries.



19. ENVIRONMENT

Solar Energy Corporation of India

- Set up in 2011, Solar Energy Corporation of India Ltd is the only Central Public Sector Undertaking (CPSU) dedicated to solar energy sector.
- Its vision is to build 'Green India' through harnessing abundant solar radiation and to achieve energy security for the country.
- It is a Section-3 company under the Companies Act, 2013 that comes under the Ministry of New and Renewable Energy (MNRE).
- It is responsible for implementation of a number of schemes of MNRE,
 1. Viability Gap Fund (VGF) schemes for large-scale grid-connected projects under Jawaharlal Nehru National Solar Mission (JNNSM),
 2. Solar park scheme and grid-connected solar rooftop scheme,
 3. A host of other specialised schemes such as defence scheme, canal-top scheme, Indo-Pak border scheme etc.
- The mandate of the company has also been broadened to cover the entire renewable energy domain.
- The company also has a power trading license and trades the solar power from projects set up under the schemes being implemented by it.

Carbon Watch

- It is India's first app to assess the carbon footprint of an individual.
- [Carbon footprint is the amount of greenhouse gases-especially carbon dioxide-released into the atmosphere by a particular human activity.]
- Chandigarh became the first state or Union Territory in India to launch the Android-based app Carbon Watch.
- As a person downloads the app, they will need to fill details in four categories - Water, Energy, Waste and Transport (Vehicular movement) category.

Tree City Status to Hyderabad

- Hyderabad city has the 'Tree Cities of the World' status by the Arbor Day Foundation jointly with the UN Food and Agriculture Organisation.
- It is the only city in India to have been selected for this recognition for its commitment to growing and maintaining urban and community forestry.
- Hyderabad applied for this recognition, citing the State government's Haritha Haram programme and its initiative for the Urban Forest Parks.
- It was evaluated based on five standards –
 1. **Establish Responsibility** - For taking care of trees within municipal boundary to a staff member, a city department, or a group of citizens (Tree Board).
 2. **Set the Rules** - A law or an official policy to govern the management of forests and trees.
 3. **Know What You Have** - An updated inventory or assessment of the local tree resource.
 4. **Allocate the Resources** - Dedicated annual budget for the routine implementation of the tree management plan
 5. **Celebrate the Achievements**



Deep Ocean Mission

- This mission, announced by Indian government, will cover deep ocean survey exploration and projects for the conservation of deep sea bio-diversity.
- However, there are two ongoing government projects on to study the Indian Ocean under the Ministry of Earth Sciences (MoES), which are,
 1. Ocean Services, Technology, Observations, Resources, Modelling and Science (O-STORMS) project.
 2. Ocean Services, Modelling, Application, Resources and Technology (O-SMART) project.
- **O-STORMS** developed a polar remotely operated vehicle for shallow waters of up to 500m depth.
- The vehicle was deployed in the undulating reef terrain of the Andaman coral islands.
- It records high quality underwater visuals of coral reef biodiversity with spectral irradiance.
- **O-SMART** project collects information of marine living resources, monitors pollution in the Indian Ocean and develop underwater vehicles.
- It will carry out exploration of poly-metallic nodules from water depth of 5,500 m in Central Indian Ocean Basin. This was to investigate the depths of the ocean for gas hydrates.

Green Hydrogen Energy Mission

- The Union Budget proposed to launch a Hydrogen Energy Mission in 2021-22 for generating hydrogen from **green power sources**.
- Even though Hydrogen can be generated from many sources, India stresses on the renewable sources.
- This mission would decarbonise heavy industries, and also holds the key to clean electric mobility that doesn't depend on rare minerals.
- Hydrogen can act as an energy storage option, which would be essential to meet intermittencies (of renewable energy) in the future.
- Green hydrogen energy is vital for India to meet its Nationally Determined Contributions and ensure regional and national energy security, access and availability.

Seaweed Mission

- It is an initiative for commercial farming of seaweeds and its processing for value addition towards boosting national economy.
- It is initiated by Technology Information, Forecasting and Assessment Council (TIFAC).
- If sea weed cultivation is done in 5% of the Exclusive Economic Zone (EEZ) area of India, it can
 1. Set up new seaweed industry;
 2. Provide employment to people and Contribute to national GDP;
 3. Improve ocean productivity and create a healthier ocean;
 4. Abate algal blooms, sequester millions of tons CO₂;
 5. Produce bio-ethanol approx. 6.6 billion litres.
-

Gas Hydrates

- These are ice-like crystalline minerals formed when low molecular weight gas combines with water and freezes into a solid under low temperature and moderate pressure conditions.
- [Low molecular weight gases are methane, ethane, or carbon dioxide]
- Most gas hydrates are formed from methane (CH₄).
- Gas hydrates in the ocean can be associated with unique biological communities that use hydrocarbons or hydrogen sulphide for carbon and energy via chemosynthesis.
- They could also be dangerous as their decomposition can release ample methane.



Indian Renewable Energy Development Agency

- Indian Renewable Energy Development Agency Limited (IREDA) is a Mini Ratna (Category - I) Government of India Enterprise.
- IREDA comes under the administrative control of Ministry of New and Renewable Energy (MNRE).
- It is a Public Limited Government Company established as a Non-Banking Financial Institution in 1987.
- It is engaged in promoting, developing and extending financial assistance for setting up projects relating to new and renewable sources of energy and energy efficiency/conservation.
- The motto of the organisation is : “ENERGY FOR EVER”

National Monsoon Mission

- Under the National Monsoon Mission (NMM), state-of-the-art weather and climate prediction models are developed.
- These include models for short range to medium range (1-10 days), extended range (10 days to 30 days) and seasonal (up to one season).
- Launched by the Ministry of Earth Sciences (MoES) in 2012, this mission is a dynamical prediction system for monsoon rainfall on different time scales.
- It is executed and coordinated by Pune-based Indian Institute of Tropical Meteorology (IITM).
- It aims to improve the monsoon prediction over India on all time scales and hence it is implemented for the whole country which includes all the States and UTs.
- Climate Forecast System (CFS) of National Centres for Environmental Prediction (NCEP), US has been identified as the basic modelling system for the above purpose.

Models

- MoES has considered to use the following numerical models :
 1. American model Climate Forecast System (CFS) developed by NCEP, NOAA National Weather Service, USA.
 2. Unified Model (UM), developed by the United Kingdom Meteorological Office (UKMO), UK.
- **CFS model** is a coupled ocean-atmosphere modelling system.
- It combines data from ocean, atmosphere and land for providing long range forecasting (seasonal prediction of Indian Monsoon).
- Model developments on CFS will be implemented by IITM, with atmospheric initial conditions from NCMRWF and Ocean initial conditions from INCOIS.
- **UM model** will be utilized for short to

India's First CNG Tractor

- India's first ever Compressed Natural Gas (CNG) Tractor was launched.
- The CNG tractor's most important benefit for the farmer will be to save up to 50% on the fuel cost, as CNG is only Rs. 42 / kilogram.
- The conversion from diesel to CNG will be beneficial as it is a clean fuel with lowest carbon and pollutant content.
- It is also economical as it has zero lead and is non-corrosive, non-dilutive and non-contaminating which helps in increasing the life of the engine.
- Stubble can be used as a raw material for producing bio-CNG which will help the farmers to earn money by selling it to the bio-CNG production units in their locality.

Fish Pass

- Fish passes for hilsa fish constructed by the government in 2019, to redesign the navigation lock at the Farakka Barrage, has proved fruitful now.
- Hilsa is an anadromous fish i.e., it lives most of its life in the ocean, but during the rainy season (spawning time), it moves towards the estuary, where the rivers of India and Bangladesh meet the Bay of Bengal.
- This fish pass project has facilitated the movement of hilsa upstream along the Ganga to its spawning grounds.



- [Farakka Barrage, operational on the Ganga since 1975, disrupted the westward movement of the hilsa.]
- Fish passes or fish ladders or fish ways aim to assist fish in crossing obstacles presented by dams and barrages.
- They usually consist of small steps that allow the fish to climb over the obstacles and enable them to reach the open waters on the other side.
- For the intervention to work, the water running over these ladders must be controlled - it must be adequate to catch the attention of the fish, but not too strong to deter them from swimming against it.

Extinction Rebellion

- Extinction Rebellion (XR) was launched in the **United Kingdom** in 2018, as a response to the UN Intergovernmental Panel on Climate Change (IPCC) report that declared,
 1. We only have 12 years to stop catastrophic climate change and
 2. We have entered the 6th mass extinction event.
- It is a global movement to **persuade the governments** to act justly on the Climate and Ecological Emergency.
- It is a decentralised and politically non-partisan movement that uses non-violent Direct Action and Civil Disobedience.
- It asks the groups to **rebel and self-organise**, without the need for anyone's permission, to come up with collective action plans that adhere to the group's core principles and values.
- The group has "three core demands" to the governments around the world, in order to confront the climate and ecological emergency that the world is faced with.
- It wants governments to "Tell the Truth", "Act Now", and "Go Beyond Politics".

Bio-restoration

- A new technology for ecological restoration (Bio-restoration) was developed to revive the mangroves degraded due to rising sea levels, climate change and human intrusion in the Sunderbans, West Bengal.
- [The Sundarbans is a protected wetland under the Ramsar Convention and is also a UNESCO World Heritage site.]
- Ecological restoration means reviving native ecosystem in degraded areas while maintaining diversity of original flora and fauna through regeneration but bringing down the regeneration period to 4 to 5 years.
- Restoration process begins with stabilising entire site by planting native salt tolerant grasses. It involves the use of growth-promoting bacteria.
- The restoration project was initiated with help from the Department of Biotechnology in 2013 and is now likely to be extended to 100 acres.
- The transplantation of propagated mangroves started in 2014, initially at a moderately degraded patch and then at severely degraded zones.

SPECIES IN NEWS

Arka Shubha

- Arka Shubha variety of marigold was developed by the Indian Institute of Horticultural Research (IIHR).
- It has the **highest carotene content** of 2.8% from plant source. All marigolds have carotene content that ranges up to a maximum of 1.4%.
- Arka Shubha is of value even if it gets spoilt after full bloom as it can be used for **extraction of crude carotene** - to be used in pharmaceutical sector.
- Apart from ornamental use and carotene content extraction, its petals could be used as **poultry feed** to get quality yolk.



Snake Eel

- A new species of snake eel has been discovered from the ports of Paradip in Odisha and Petuaghat harbour in West Bengal.
- The name proposed for the new species is 'Indian fringe-lip eel' or *Cirrhimuraena indica*.
- The new species belonged to the same clade as *Cirrhimuraena chinensis* and was separated from it morphologically and genetically.
- *Cirrhimuraena chinensis* is a tropical, marine eel that is known from China and Papua New Guinea, in the western Pacific Ocean.
- *Cirrhimuraena* genus in Indian waters is *Cirrhimuraena playfairii* or the fringe-lip snake eel in the Godavari estuarine system.

Pangolins

- Pangolins in Cameroon are on the verge of extinction as the Cameroonians prefer bushmeat to domestic livestock as they are easily available and cheaper.
- Pangolin, a scaly **nocturnal anteater**, is one of the world's most trafficked mammals.
- It is being pushed towards extinction due to rampant poaching and mushrooming international wildlife trade fuelled by Chinese poachers.
- International Union for Conservation of Nature (IUCN) has classified,
 1. Indian Pangolin as **Endangered** and
 2. Chinese Pangolins as **Critically Endangered**.
- Convention on International Trade in Endangered Species (CITES) has placed all eight pangolin species to **Appendix I**.

Dickinsonia

- Researchers have discovered fossils of the earliest known living animal, 550-million-year-old 'Dickinsonia' in the roof of the '**Auditorium Cave**' at the Rock Shelters of Bhimbetka.
- Dickinsonia is an extinct genus of basal animal that lived during the late **Ediacaran period** in what is now Australia, Russia and Ukraine.
- These are the only Dickinsonia fossils available in India, and are similar to those seen in southern Australia.
- This is further proof of **similar paleoenvironments** and confirms the assembly of Gondwanaland by the 550 Ma (Mega Annum), but not reconstructions adjusted for true polar wander.

Siberian Mammoths

- Scientists have sequenced the oldest DNA on record, from the molars of mammoths that roamed Siberia up to 1.2 million years ago.
- Until now, the oldest DNA came from a horse that lived in Canada's Yukon Territory about 700,000 years ago.
- This gave insights into mammoth evolution and migration by comparing the DNA to that of mammoths that lived more recently (4,000 years ago).
- The molars of the mammoths were discovered near the Krestovka River, Adycha River and the Chukochya River.
 1. Krestovka mammoth belonged to a previously unknown genetic lineage that more than 2 million years ago diverged from the lineage that led to the well-known woolly mammoth.
 2. Adycha mammoth's lineage was ancestral to the woolly mammoth.
 3. Chukochya individual is one of the oldest-known woolly mammoth specimens.
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20. SCIENCE AND TECHNOLOGY

SPACE

Chandrayaan-3

- Chandrayaan-3 is likely to be launched in 2022 (earlier scheduled to be launched in late 2020).
- Indian Space Research Organisation's (ISRO's) Chandrayaan-3 is India's third mission to Moon.
- It aims to make a soft-landing in the Lunar South Pole's Aitken basin.
- It will consist of only a lander and rover, as the orbiter of Chandrayaan-2 is still functioning and providing data.

Gaganyaan

- ISRO is targeting December, 2021 to launch the unmanned test mission of Gaganyaan project (earlier scheduled for December 2020).
- ISRO's Gaganyaan is India's first manned space mission.
- It envisages sending three Indians to space by 2022. Four pilots have been selected for the mission and they are undergoing training in Russia.
- Gaganyaan will involve Geosynchronous Satellite Launch Vehicle **GSLV Mark III** rocket with a modified upper stage compatible with a crew module and crew escape system.

Neutrinos and Star Death

- Many stars, towards the end of their lifetimes, form **supernovas** - massive explosions that send their outer layers shooting into the space.
- Most of the energy of the supernova is carried away by **neutrinos** - tiny particles with no charge and which interact weakly with matter.
- Researching the mechanisms of **Type II supernovas**, IIT Guwahati has come up with new insights into the part played by neutrinos in the death of massive stars.
- They claim that a three-flavour model of neutrinos is needed to predict the dynamics of the supernova.
- They have found that the fast oscillations of neutrinos decide the flavour information of the supernova neutrinos.

Supernovas

- All stars burn nuclear fuel in their cores to produce heat energy, which generates internal pressure that pushes outwards. This pressure prevents the star from collapsing inward due to the action of gravity on its own mass.
- But when a star ages and runs out of fuel to burn, it starts to cool inside, which causes a lowering of its internal pressure and therefore due to gravity the star starts to collapse inwards.
- This builds up shock waves because it happens very suddenly, and the shock wave sends the outer material of the star flying. This is supernova.
- In stars that are **more than eight times** as massive as the Sun, the supernova is accompanied by a collapsing of the inner material of the dying star - this is known as Type II or core collapse supernova.
- The collapsing core may form a black hole or a neutron star, according to its mass.

Neutrinos

- Neutrinos come in three 'flavours' or 'types', and each flavour is associated with a light elementary particle - Electron-neutrino associated with the electron; muon-neutrino with muon and tau-neutrino with tau particle.
- As they spew out of the raging supernova, the neutrinos can change from one flavour to another in a process known as **neutrino oscillations**.



- Due to the high density and energy of the supernova, several interesting features emerge as this is a nonlinear phenomenon.
- This phenomenon may generate neutrino oscillations happening simultaneously over different energies (unlike normal neutrino oscillation), termed collective neutrino oscillation.
- The oscillation result may dramatically change when one allows the evolution with the angular asymmetry, the oscillations can happen at a nanosecond time scale, termed **fast oscillation**.

Bhuvan Geospatial Portal

- Indian Space Research Organisation (ISRO) has joined with MapmyIndia to offer fully indigenous mapping solutions.
- This is in line with the [new guidelines](#) for the Geo-Spatial Sector in India.
- As part of the deal, ISRO and MapmyIndia would develop solutions by leveraging their geoportals and work on enhancing geospatial expertise.
- The partnership brings together MapmyIndia's digital maps and ISRO's catalogue of satellite imagery and earth observation data.
- Their partnership would help in further development of the indigenous geospatial portal '**Bhuvan**' of the ISRO.
- Holistic geospatial solutions will be built jointly utilising the earth observation datasets, "NavIC", "Bhuvan", "VEDAS" and "MOSDAC" geoportals, Web Services and APIs of MapmyIndia.

Progress MS-16 Cargo Ship

- Progress MS-16 or Progress 77 cargo ship has delivered water, propellant and other supplies to the International Space Station (ISS).
- Progress MS-16 is an **unmanned** Russian cargo ship launched by Russian Space Agency, **Roscosmos**.
- **International Space Station** is the only active modular space station (habitable artificial satellite) in the Earth's Orbit.
- It is the largest artificial object in space and the largest satellite in low Earth orbit, visible to the naked eye from Earth's surface.
- It is a joint project between five participating space agencies - NASA (USA), Roscosmos, Japan Aerospace Exploration Agency (JAXA), European Space Agency, and Canadian Space Agency.

Stardust 1.0

- The United States of America's Stardust 1.0 became the first commercial space launch powered by biofuel.
- Stardust 1.0 is a launch vehicle suited for student and budget payloads.
- It has a mass of 250 kg and can carry a maximum payload mass of 8 kg.
- It is manufactured by bluShift, an aerospace company that is developing rockets that are powered by bio-derived fuels.
- These rockets will help to launch small satellites called cubesats into space in a way.
- These rockets are relatively cheaper than using traditional rocket fuel and are less toxic for the environment.

WASP-62b

- This is an exo-planet, which was first found in **2012**.
- It is 575 light years away and orbits its star in just four-and-half days.
- For the first time, astronomers have come across a huge planet with about half the mass of Jupiter which is cloudless and unblocked by haze.



Mars Missions

- Three Mars missions - UAE's Hope, NASA's Perseverance and China's Tianwen-1 - are set to land on Mars in the year 2021.
- Earth and Mars are at their closest distance relative to each other every 26 months and this is when Earthlings try to send missions to Mars.
- Currently, there are 10 spacecraft from five different space agencies, either orbiting or on the ground on Mars.
 1. NASA has a lander (Mars Insight), a rover (Curiosity), and three orbiters (Mars Reconnaissance Orbiter, Mars Odyssey, MAVEN);
 2. India has an orbiter ([Mangalyaan-1](#))
 3. European Union has 2 orbiters (Mars Express and ExoMars Trace Gas Orbiter)
 4. UAE has an orbiter (Hope)
 5. China has an orbiter (Tianwen-1)

Cats Warrior

- It is a programme by the Hindustan Aeronautics Limited (HAL), which will have an unmanned fighter jet controlled by pilots in another fighter jet flying a few hundred kilometres behind.
- Called 'manned-unmanned' teaming, it has the capability to go deep into enemy territory and hit a target.
- The manned jet will remain in own territory and the 'cats warriors' with a set of missiles will fly ahead and hit target 700 kms away.
- The engine of the 'Cats warrior' is developed in house and is tweaked version of the Lakshya pilotless aircraft.

Helina and Dhruvastra

- Defence Research and Development Organisation (DRDO) has designed and developed anti-tank guided missiles, namely - Army version Helina, and Airforce variant Dhruvastra.
- These are third generation, Lock-on-Before-Launch (**LOBL**) fire-and-forget anti-tank guided missiles that can engage targets both in direct hit mode as well as top attack mode.
- The system has **all-weather day and night capability**.
- They can defeat battle tanks with conventional armour as well as with explosive reactive armour.
- The missiles could be fired in hover and max forward flight against realistic static and moving targets.

VL-SRSAM Missile System

- Vertical Launch **Short Range** Surface to Air Missile (VL-SRSAM) was launched by DRDO.
- It is indigenously designed and developed by **DRDO**, along with Research Centre Imarat, and the Pune-based Research and Development Establishment (Engineers).
- Once deployed, the VL-SRSAM system will prove to be a force multiplier for the **Indian Navy**.
- With an effective Weapon Control System (WCS), it would neutralize various aerial threats at close ranges including sea-skimming targets.
- [Sea-skimming targets have the capability to avoid detection by radar or infrared sensors.]



HEALTH

Cap on TFA

- Food Safety and Standards Authority of India (FSSAI) has amended its rules to put a cap on Trans Fatty Acids (TFAs) in food products.
- Food products with edible oils and fats will not contain industrial TFAs more than 2% by mass of the total oils/fats present in the product, on and from 1st January, 2022.
- Previously, it had capped TFAs in oils and fats from the current levels of 5% to 3% by 2021 and 2% by 2022.
- The World Health Organisation (WHO) has called for the elimination of industrially-produced TFAs from the global food supply by 2023.

Trans Fatty Acids

- They are the most harmful form of fats, which are created in an industrial process that adds hydrogen to liquid vegetable oils to make them more solid, increase shelf life of food items.
- They are present in baked, fried and processed foods as well as adulterated ghee.
- They clog arteries and cause hypertension, and other cardiovascular diseases.

Acute Encephalitis Syndrome

- A child has recently been diagnosed with Acute Encephalitis Syndrome (AES) in Bihar.
- AES, locally called chamki bukhari (fever causing seizure), usually surfaces during summer in the flood-prone districts of north Bihar.
- It is characterized by acute-onset of fever and a change in mental status (mental confusion, disorientation, delirium, or coma) along with new-onset of seizures in a person of any age at any time of the year.
- It most commonly affects children and young adults and can lead to considerable morbidity and mortality.
- Viruses are the main causative agents in AES cases, although other sources such as bacteria have also been reported.
- Japanese encephalitis virus is the major cause of AES in India (5%-35%). Influenza A virus, West Nile virus, Chandipura virus, mumps, measles, dengue, Nipah, Zika are the other causes of AES in India.
- Due to the wide range of causal agents and the rapid rate of neurological impairment, clinicians face the challenge of a small window period between diagnosis and treatment.
- Widely reported areas - Assam, Bihar, Jharkhand, Karnataka, Manipur, Meghalaya, Tripura, Tamil Nadu, UP.

Non-Alcoholic Fatty Liver Disease

- Ministry of Health & Family Welfare is going to integrate Non-Alcoholic Fatty Liver Disease (NAFLD) with National Programme for Prevention & Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS).
- Non-Alcoholic Fatty Liver Disease (NAFLD) is an important cause of liver disease in India (9-32%).
- **Conditions** - It is a distinct hepatic condition where there is accumulation of excess fat in the liver of people who drink little or no alcohol, causing fatty liver.
- Non-alcoholic steatohepatitis (NASH) is a more serious condition that may lead to severe liver cell inflammation and scarring, and cirrhosis.
- **Symptoms** - Abdominal pain, fatigue, slightly enlarged liver, patchy, dark discoloration of the skin (acanthosis nigricans) over the neck and under the arm.
- **Causes** - NAFLD is a part of the metabolic syndrome characterized by diabetes, or pre-diabetes (insulin resistance), being overweight or obese, elevated blood lipids such as cholesterol and triglycerides, and high BP.
- Several factors that may contribute to the development of NASH are:
 1. Oxidative stress (between pro-oxidant and anti-oxidant chemicals imbalance that lead to liver cell damage)
 2. Release of toxic inflammatory proteins (cytokines) by the patient's own inflammatory cells, liver cells, or fat cells



3. Liver cell necrosis or death, called apoptosis
 4. Adipose tissue inflammation and infiltration by white blood cells
 5. Gut microbiota (intestinal bacteria) causing liver inflammation
- **Screening/Diagnosis** - Blood testing or radiologic investigations such as abdominal ultrasound or CT scan.
 - **Treatment** - Weight reduction, controlling diabetes and treating elevated cholesterol levels, decrease in the amount of liver inflammation through anti-oxidant, anti-apoptotic and anti-cytokine medications.

Haemorrhagic Septicaemia

- Six elephants died of haemorrhagic septicaemia (Sahana disease) in Karlapat Wildlife Sanctuary in Odisha's Kalahandi district.
- Haemorrhagic septicaemia is a **contagious bacterial disease** that occurs in parts of Asia and Africa.
- It infects animals that come in contact with **contaminated** food and water or soil or through **respiratory secretions**.
- It spreads through contact with infected animals, contaminated clothes, equipment and ingestion or inhalation of the bacteria.
- It generally spreads in the period right **before and after the monsoons**. It can affect cattle, buffalo and other animals.
- Respiratory tract and lungs of the animals are affected, leading to severe **pneumonia** and is often fatal.

Karlapat Wildlife Sanctuary

- Karlapat Wildlife Sanctuary is located in Kalahandi district of **Odisha**.
- It lies within the Eastern Highlands moist deciduous forests ecoregion.
- It was notified as a wildlife sanctuary in 1992.
- It is home to tigers, leopards, sambars, nilgais, barking deer, mouse deer and variety of birds like green munia, great eared-nightjar and various reptiles, apart from elephants.

Ebola Outbreak in Guinea

- **Guinea** has declared an Ebola outbreak for the first time since an outbreak ended in 2016.
- Ebola Disease is viral disease, which is also known as Ebola haemorrhagic fever.
- It is transmitted from **animal to human** through infected fruit bats, gorillas, monkeys, forest antelope or porcupines or in the rainforest.
- It is transmitted from **human to human** via direct contact (through broken skin, blood, secretions, organs or mucous membranes) with the infected or dead person.
- **Symptoms** include impaired kidney and liver function, fever, fatigue, muscle pain, sore throat, vomiting and diarrhoea.
- **Diagnosis** can be done through RT-PCR assay, ELISA assay, Antigen-capture detection tests, Serum neutralization test, etc.

Guidelines on Food Systems and Nutrition

- The members of the United Nations Committee on World Food Security (CFS) endorsed the first-ever voluntary guidelines on food systems and nutrition to end hunger and malnutrition.
- [CFS is an intergovernmental platform for stakeholders to work towards ensuring food security and nutrition for all. It is hosted and co-funded by the Food and Agriculture Organization.]
- These guidelines would support countries to eradicate hunger and malnutrition by utilising a comprehensive food systems approach.
- They are structured around seven focus areas:
 1. Transparent, democratic and accountable governance
 2. Sustainable food supply chains to achieve healthy diets in the context of economic, social and environmental sustainability

3. Equal and equitable access to healthy diets through sustainable food systems
 4. Food safety across sustainable food systems
 5. People-centred nutrition knowledge, education and information
 6. Gender equality and women's empowerment across food systems
 7. Resilient food systems in humanitarian contexts
- The guidelines would complement the work and mandate of other international bodies. (eg): UN Decade of Action on Nutrition 2016-2025.

OTHERS

Einsteinium

- Berkeley Lab's scientists have reported some of the properties of element 99 in periodic table called "Einsteinium", named after Albert Einstein.
- It was discovered in 1952 in the debris of the first hydrogen bomb (Detonation of a thermonuclear device called "Ivy Mike" in the Pacific Ocean).
- [When Ivy Mike was detonated in 1952, as part of a test at island Elugelab on the Eniwetok Atoll in the South Pacific, it was 500 times more destructive than the explosion that occurred at Nagasaki.]
- It is difficult to create and is highly radioactive.
- Einsteinium-254 is the more stable isotope of the artificial element, has a half-life of 276 days.
- The most common isotope of the element, Einsteinium 253 has a half-life of 20 days.
- Because of its high radioactivity and short half-life of all einsteinium isotopes, even if the element was present on Earth during its formation, it has most certainly decayed.
- This is the reason that it needs to be manufactured using very precise and intense processes.

Cadmium doped Silver Antimony Telluride

- Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) has found a new material called Cadmium doped Silver Antimony Telluride (AgSbTe₂), which is lead-free.
- [Bengaluru-based JNCASR is an autonomous institution of the Department of Science & Technology (DST), Government of India]
- This new material can efficiently convert waste heat to electricity to power our small home equipment and automobile.
- This single material has three seemingly different properties - high electrical conductivity of metals, high thermoelectric sensitivity of semiconductors, and low thermal conductivity of glasses.
- [Thermoelectric energy conversion allows generation of electrical voltage when one end of a material is heated while keeping the other side cold.]
- As there is no lead in this new material, it can be used for mass-market applications.

21. INDEX AND REPORT

Global Climate Risk Index 2021

- This Index, released by think tank 'Germanwatch', ranked countries according to their vulnerability to extreme weather events like storms, floods and heat waves.
- India was ranked the 7th worst-hit country in 2019 in this index.
- Eight of the 10 countries most affected between 2000 and 2019 were developing countries with low or lower middle income per capita.

- It said that the vulnerable people in developing countries suffered most from extreme weather events, whereas the impact of climate change was visible around the globe.

Asia-Pacific Personalised Health Index

- India ranked 10th out of 11 countries in this newly-launched health index, released by the Economist Intelligence Unit (EIU).
- [The EIU is the world's leading resource for economic and business research, forecasting and analysis.]
- The index measures the progress of 11 Asia Pacific countries towards personalised healthcare.
- [Countries - Australia, China, Japan, India, Indonesia, Malaysia, Singapore, South Korea, Taiwan, Thailand and New Zealand.]
- It measures their readiness in adopting personalised healthcare, enabling the right care to be tailored to the right person at the right time.
- It measures performance against 27 different indicators of personalised health across four categories called "Vital Signs". These include,
 1. **Policy Context** indicator takes into account the polities, frameworks, partnerships, people and drivers that will facilitate personalised healthcare.
 2. **Health Information** indicator takes into account data, infrastructure and technical expertise driving personalised healthcare.
 3. **Personalised Technologies** indicator takes into account the devices, applications, platforms and reimbursement structures that will drive personalised healthcare based on stakeholders' needs.
 4. **Health Services** indicator takes into account planning, organisation and delivery of services with respect to personalised healthcare.

Democracy Index 2020

- This index report titled "Democracy in sickness and in health?" was released by the Economist Intelligence Unit (EIU).
- It had classified 167 countries, as full democracies, flawed democracies, hybrid regimes and authoritarian regimes.
- It looks at the impact of the Covid-19 pandemic on freedom and democracy around the world.
- India had slipped two places to **53rd position** and has been classified as a '**flawed democracy**' in this Index, due to the democratic backsliding by authorities and crackdowns on civil liberties.

ADR Report

- The Association for Democratic Reforms (ADR) has released a report, which says that the number of registered unrecognised political parties has increased two-fold from 2010 to 2019 (10 years).
- Between 2018 and 2019, it increased by over 9.8% while between 2013 and 2014, it increased by 18%.
- **Basis** - Election Commission of India issued guidelines on "Transparency and Accountability in party funds and election expenditure - submission of reports by unrecognised political parties".
- This is applicable to all political parties w.e.f October 1, 2014.
- As per these guidelines, all unrecognised parties are required to submit their requisite reports in the office of the respective state CEOs.
- In view of the above, this report by ADR analyses the status of submission of contribution reports of registered unrecognised parties between FY 2017-18 and FY 2018-19.

National Coal Index

- The Ministry of Coal has started Commercial Auction of coal mines on revenue share basis.
- National Coal Index (NCI) was conceptualized to arrive at the revenue share based on market prices of coal.

- NCI is a **price index** which reflects the change of price level of coal on a particular month relative to the fixed base year (**Financial Year 2017-18**).
- Prices of coal from all the sales channels of coal, including import, as existing today are taken into account for compiling the NCI.
- The amount of revenue share per tonne of coal produced from auctioned blocks would be arrived at using the NCI by means of defined formula. NCI is composed of a set of five sub-indices:
 1. Three for Non Coking Coal, which are combined to arrive at the Index for Non Coking Coal and
 2. Two for Coking Coal, which are combined to arrive at the Index for Coking Coal.

Report on Road Accidents

- Report on road accidents was prepared by the **World Bank** in collaboration with NGOSave Life Foundation.
- With just 1% of the world's vehicles, India accounts for 11% of the global death in road accidents - the highest in the world.
- India witnessing 53 road crashes every hour; killing 1 person every 4 minutes.
- Crash costs are estimated at 3.14% of India's Gross Domestic Product.

India Energy Outlook 2021

- This report - released by the International Energy Agency (IEA) - has forecasted that India will overtake the European Union as the world's third-largest energy consumer by 2030.
- [At present, India is the 4th-largest global energy consumer behind China, the US and the European Union.]
- It is based on the forecast that India accounts for the biggest share of energy demand growth over the next two decades.
- India's primary energy consumption would double as the Gross Domestic Product (GDP) expands to USD 8.6 trillion by 2040.
- India accounts for one-quarter of global energy demand growth from 2019-40 - the largest for a country.
- Its share in the growth in renewable energy is the second-largest in the world, after China.

Consumer Price Index

- Consumer Price Index (CPI) for Agricultural Labourers (AL) and Rural Labourers (RL) as well as for Industrial Workers (IW) for the month of January 2021 was released.
- The base year for the CPI-AL and RL calculation is **1986-87**(=100) and for CPI for IW is **2016** (=100).
- **CPI** was adopted as the key measure of retail inflation by the Reserve Bank of India in 2014.
- India uses **2012** as the base year for calculating CPI.
- It is calculated by taking weighted average of changes in price over time for each item in the predetermined basket of goods and services, such as transportation, food, and medical care.
- This is done from the perspective of a retail buyer.
- **Labour Bureau** under the Ministry of Labour and Employment compiles the CPI for Industrial Workers (IW), Agricultural Labourer (AL) and Rural Labourer (RL).
- **Central Statistical Organisation (CSO)** under the Ministry of Statistics and Programme Implementation compiles CPI (Rural/ Urban/ Combined).

Index of Eight Core Industries

- This index for January, 2021 was released by the Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade.
- **Eight Core Industries** - Coal, Crude Oil, Natural Gas, Petroleum Refinery Products, Fertilizers, Steel, Cement, Electricity.



- These industries comprise 40.27% of the weight of items included in the Index of Industrial Production (IIP).
- Since 2014, Electricity generation data from Renewable sources are also included.
- Since 2019, a new steel product called Hot Rolled Pickled and Oiled (HRPO) under the item 'Cold Rolled (CR) coils' within the production of finished steel has also been included.

22. PRELIMS PRACTICE QUESTIONS

1) With respect to *Economic Survey of India*, consider the following statements

1. India's first Economic Survey was presented in the year 1950-51.
2. The economic survey has been delinked from the Budget in the year 1964 and thereafter released separately.
3. It will be prepared by the Economics Division of the Department of Financial Services (DFS), Ministry of Finance.

Which of the statement(s) given above is/are correct?

- a) 1 only
- b) 2 only
- c) 1 and 2 only
- d) 1, 2 and 3

2) *Green Tax*, sometimes seen in the news recently, refers to?

- a) It is an additional tax on fossil fuels price to reduce carbon dioxide emission
- b) It will be collected from miners to improve the life of persons affected by mining
- c) It is an additional tax collected to dissuade people from using polluting vehicles
- d) None of the above

3) Assertion (A): All stars burn nuclear fuel in their cores to produce energy.

Reason (R): The heat generates internal pressure which pushes outwards and prevents the star from collapsing inward due to the action of gravity on its own mass.

Select the correct answer using the codes given below:

- a) Both A and R are true and R is the correct explanation of A
- b) Both A and R are true and R is not the correct explanation of A
- c) A is true and R is false
- d) A is false and R is true

4) Which of the following statements are correct with respect to *Nuclear Medicines*

1. It uses small amounts of radioactive materials called radiotracers that are typically injected into the bloodstream, inhaled or swallowed.
2. Hyperthyroidism, thyroid cancer, and bone pain from some types of cancer are few diseases treated with nuclear medicine.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2



5) Which of the following statements are correct with respect to *Pattachitra Painting*

1. It is a form of painting that is painted on a piece of cloth in states of Bengal and Odisha.
2. The Odisha version of the painting depicts Hindu mythology and specially inspired by Jagannath and Vaishnava sect.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

6) Consider the following statements with respect to *National e-Vidhan Assembly (NeVA)*

1. It is a part of digital India mission implemented by Ministry of Electronics and Information Technology.
2. It enables automation of entire law making process, tracking of decisions and documents, sharing of information.

Which of the statement(s) given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

7) Which of the following statements are correct with respect to *Hydrogen Energy Mission*

1. It aims to produce hydrogen in large scale through reforming methane (CH₄).
2. It aims to decarbonise heavy industries like steel and cement.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

8) Consider the following statements with respect to *Star Dust 1.0*

1. It is first commercial space launch vehicle powered by biofuel.
2. It is launched by NASA for carrying payloads to moon.

Which of the statement(s) given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

9) Which of the following statements are correct with respect to *Lingaraj Temple*

1. The central deity of the temple, Lingaraja, is worshipped both as Shiva and Vishnu.
2. The temple is built by the kings from the Somavamsi dynasty, with later additions from the Ganga rulers.

Select the correct answer using the codes given below:

- a) 1 only



- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

10) Which of the following agency has setup a committee that recommended introduction of *Cyber Insurance Policy*?

- a) World Bank
- b) Reserve Bank of India (RBI)
- c) Life Insurance Corporation of India (LIC)
- d) Insurance Regulatory and Development Authority of India (IRDAI)

11) Which of the following statements are correct with respect to *One Person Companies (OPCs)*

1. OPC is effectively a company that has only one shareholder as its member.
2. The residency limit for an Indian citizen to set up an OPC is 120 days.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

12) Global Ecosystem Dynamics Investigation (GEDI) is a mission of which of the following space agency?

- a) Indian Space Research Organisation (ISRO)
- b) Japan Aerospace Exploration Agency (JAXA)
- c) China National Space Administration (CNSA)
- d) National Aeronautics and Space Administration (NASA)

13) Which of the following organizations has released *Democracy Index 2020*?

- a) World Economic Forum (WEF)
- b) International Monetary Fund (IMF)
- c) Economic Intelligence Unit (EIU)
- d) Reporters without Borders

14) Consider the following statements about *Startup India Seed Fund Scheme*

1. It aims to provide financial assistance to start-ups up to Rs. 70 lakh and incubators up to Rs. 5 crore as grant.
2. The scheme is implemented by the Ministry of Finance.

Which of the above statement(s) is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2



15) Consider the following statements about Major Port Authorities Bill, 2020

1. It will apply to 11 Major ports and other strategically important Minor ports.
2. It replaces all the existing port trusts and tariff authority for Major ports.
3. Corporate Social Responsibility (CSR) is applicable for the newly created Board of Major Port Authority for each major port.

Which of the above statement(s) is/are incorrect?

- a) 1 only
- b) 2 only
- c) 1 and 3 only
- d) 2 and 3 only

16) MeriSaheli Initiative for the security of women was launched by which of the following organisation?

- a) Centre for Development of Advanced Computing (C-DAC)
- b) Software Technology Parks of India (STPI)
- c) Railway Protection Force
- d) Technology Information, Forecasting and Assessment Council (TIFAC)

17) Consider the following statements about National Fellowship Scheme for Scheduled Caste Students

1. Ministry of Education provides Fellowships to Scheduled Caste students pursuing M.Phil and Ph.D.
2. It is a central sector scheme and funds are not allocated state wise.

Which of the above statement(s) is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

18) Consider the following statements about Occupational Safety, Health and Working Conditions Code, 2020 (OSH code)

1. It subsumes Inter-state Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979.
2. The provisions of the code are applicable to every establishment in which 10 or more inter-state migrant workers are employed or were employed on any day of the preceding 12 months.

Which of the above statement(s) is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

19) Which of the following statements are correct with respect to Koch Rajbongshis

1. They are served warriors of Ahom Dynasty.
2. They are found in India, Bangladesh, Nepal and some parts of Bhutan.

Select the correct answer using the codes given below:

- a) 1 only



- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

20) Consider the following statements about *Hilsa fish*

1. Hilsa fishes are catadromous, which lives most of the time in ocean and move towards fresh water for spawn during rainy season.
2. Farakka Barrage aids the movement of hilsa fishes in the Ganga stream up to Allahabad.
3. There are also records of migration to Cauvery and Godavari River.

Which of the above statement(s) is/are correct?

- a) 1 only
- b) 3 only
- c) 1 and 3 only
- d) 2 and 3 only

21) Consider the following statements about Tholpavakkoothu

1. It is a form of string puppet popular in the State of Kerala.
2. It is performed at the specially constructed theatre called Koothu Madam in front of the Bhagavati temple.
3. It uses Tamil epic Kambaramayana as its basic text.
4. It is also known as Nizhalkkoothu and Olakkoothu.

Which of the above statement(s) is/are correct?

- a) 1, 2 and 4 only
- b) 2, 3 and 4 only
- c) 1, 3 and 4 only
- d) All of the above

22) Consider the following statements about VigyanJyoti programme

1. It is an initiative by the Department of Science and Technology.
2. It is to encourage girls to take interest in Science, Technology, Engineering and Mathematics (STEM).

Which of the above statement(s) is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

23) Consider the following statements about Longitudinal Aging Study in India (LASI)

1. It is a longitudinal survey to examine aging and retirement among India's population aged 55 and above.
2. According to the recent report, every 20th family has a history of cancer and it is prevalent more in rural areas than urban areas.

Which of the above statement(s) is/are incorrect?

- a) 1 only
- b) 2 only
- c) Both 1 and 2



d) Neither 1 nor 2

24) Which of the following organization has developed India's Instant messaging app Sandes?

- a) Computer Emergency Response Team (Cert-In)
- b) Centre for Development of Advanced Computing (C-DAC)
- c) National Technical Research Organisation (NTRO)
- d) National Informatics Centre (NIC)

25) Which of the following statements are correct with respect to Digital Services Tax (DST)

- 1. It is a 5% tax that India has charged on digital services revenues of a company generated from across globe.
- 2. It is applicable only to non-resident digital companies.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

26) Which of the following statements are incorrect with respect to Mandarin Duck

- 1. It is a small-exotic bird native to East Asia.
- 2. It is very rare to spot and mentioned as critically endangered under IUCN Red list.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

27) Which of the following statements are incorrect with respect to Digital Intelligence Unit (DIU)

- 1. It will be the nodal agency to deal with complaints of unsolicited commercial communication (UCC).
- 2. It will be a setup under Ministry of Communications.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

28) Which of the following statements are correct with respect to Khwaja Moinuddin

- 1. He was a 14th century Sufi saint of Qadiriyya Order.
- 2. He rejected all material goods as distractions from the contemplation of God.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2



d) Neither 1 nor 2

29) Consider the following statements with respect to *Committee on World Food Security (CFS)*

1. It is funded by Food and Agriculture Organization (FAO), International Fund for Agricultural Development (IFAD) and the World Food Programme (WFP).
2. It has endorsed the first-ever Voluntary Guidelines on Food Systems and Nutrition (VGFSyN).

Which of the statement(s) given above is/are incorrect?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

30) Consider the following statements with respect to *Housing Finance Companies*

1. Its financial assets in the business of providing finance for housing constitute not less than 60% of its total assets.
2. Loans provided by HFCs and NBFCs are linked to the prime lending rate (PLR) and to repo rate fixed by RBI.

Which of the statement(s) given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

31) Consider the following statements with respect to *India Energy Outlook Report*

1. It is jointly released by Ministry of Coal and Ministry of New and Renewable Energy.
2. According to the report Coal currently dominates India's electricity sector, accounting for over 70% of overall generation.

Which of the statement(s) given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

32) Which of the following statements are correct with respect to *Giant Leatherback Turtle*

1. They nest only in Indonesia, Sri Lanka and the Andaman and Nicobar Islands within the Indian Ocean.
2. It is listed as 'Critically Endangered' under the IUCN Red List of Threatened Species.

Select the correct answer using the codes given below

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

33) Which one of the following event is related to *SakaNankana Sahib*?

- a) First Sikh Commune



- b) Birth place of GurunanakDev
- c) Resting place of Guru Teghbahadur
- d) Battle ground of Guru Gobind Singh

34) Which of the following statements are *incorrect* with respect to *Transatlantic Alliance*

- 1. It is the foundation on which the collective security of the USA and Canada are built.
- 2. Shanghai Cooperation Organisation has recently joined as observer state in the alliance

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

35) Consider the following statements with respect to *Chandrayaan-3*

- 1. It is mission to lunar North Pole with lander, orbiter and a rover.
- 2. Its lander will be equipped with a Laser Doppler Velocimeter (LDV).

Which of the statement(s) given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

36) Consider the following statements with respect to *Hucheshwara Temple*

- 1. It is a Chalukya dynasty temple located in Kerala.
- 2. It was built in 12th century to celebrate the coronation of King VeeraBallala II.

Which of the statement(s) given above is/are *incorrect*?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

37) Which of the following statements are correct with respect to *Factors of high rainfall in Cherrapunji*

- 1. High rainfall in the area is caused by the orography favouring a monsoon wind regime.
- 2. The changes in the Indian Ocean temperature have a huge effect on the rainfall in the region.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2



38) Which of the following statements are *incorrect* with respect to *Land Titling system in India*

1. Land Titling is the generic term used to describe the programs implemented by the government to enable individuals and government to efficiently trade in rights in land and property.
2. India currently follows the Conclusive Land titling system under which the ownership title is granted by the government, which takes the responsibility for accuracy.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

39) Consider the following statements with respect to *Black Necked Cranes*

1. Its habitat lies in Assam and adjoining low altitude grassland areas.
2. It has been listed as near threatened under the IUCN red list.

Which of the statement(s) given above is/are *incorrect*?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

40) Which of the following are found to be causative agents of *Acute encephalitis syndrome (AES)*?

1. *Viruses*
2. *Bacteria*
3. *Fungus*
4. *Parasites*
5. *Chemical and Toxins*

Select the correct answer using the codes given below:

- a) 1 & 5 only
- b) 2 & 4 only
- c) 1, 3 & 5 only
- d) All of the above

41) Which of the following statements are *incorrect* with respect to *Polar vortex*

1. It is a whirling cone of high pressure over the poles that is weakest in the winter months.
2. Weakening polar vortex causes deep freeze conditions in a large low-pressure area around the North and South Poles.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2



42) Which of the following statement(s) is/are correct with respect to *Findings on Sun's Rotation*

1. Sun rotates more quickly at its equator than at its poles.
2. Sun's differential rotation rates cause its magnetic field to become twisted and tangled.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

43) Which of the following statements are correct with respect to *Qualified Institutional Buyers*

1. It includes mutual funds, insurance companies or foreign portfolio investors.
2. Any individual investor can obtain the Qualified Institutional Buyers (QIB) status.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

44) Consider the following statements with respect to *Blank-Cheque Company*

1. It is an entity specifically set up with the objective of acquiring a firm in a particular sector.
2. Money raised through this company is kept in a current account, which can be accessed while making the acquisition.

Which of the statement(s) given above is/are *incorrect*?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

45) Which of the following organization has released *Asia-Pacific Personalised Health Index*?

- a) Shanghai Cooperation Organisation (SCO)
- b) Economist Intelligence Unit (EIU)
- c) Association of Southeast Asian Nations (ASEAN)
- d) South Asian Association for Regional Cooperation (SAARC)

46) Which of the following organisation is donor of *Monitoring the Illegal Killing of Elephants (MIKE) Program*?

- a) World Wildlife Fund (WWF)
- b) World Economic Forum (WEF)
- c) European Union (EU)
- d) IUCN

47) Which of the following statements are *incorrect* with respect to *O-STORMS Project*

1. It is implemented by Ministry of New and Renewable Energy with a budget outlay of 600 crores.



2. A polar remotely operated vehicle was indigenously developed for shallow waters of up to 500m depth under the project.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

48) Consider the following statements with respect to *Mission Poshan 2.0*

1. It is a merger of Supplementary Nutrition Programme (SNP) and the PoshanAbhiyan.
2. It aims to address malnutrition issues in new borns between 0-6 months in every district of the country.

Which of the statement(s) given above is/are *incorrect*?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

49) Which of the following statement(s) is/are correct with respect to *Rohini Commission*

1. It was established to work out the mechanism in a scientific approach for sub-categorisation within OBCs.
2. It recommended 33% reservation in jobs and education under the central and state government for OBCs.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

50) Consider the following statements with respect to *DNA Technology Bill*

1. Under the Bill, DNA testing is allowed only in respect of matters listed in the Schedule to the Bill.
2. The Bill provides for the establishment of a National DNA Data Bank and Regional DNA Data Banks, for every state, or two or more states.

Which of the statement(s) given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANSWERS

1. c

- India's first Economic Survey was presented in the year 1950-51.
- It will be presented along with the Union Budget every year up to 1964.
- From 1964 onwards, it has been delinked from the Budget and released separately.



- It will be prepared by the Economic Division of the Department of Economic Affairs in the Finance Ministry under the overall guidance of the Chief Economic Adviser (CEA).
- Economic Survey is presented normally a day before the presentation of the Union Budget in the Parliament.

2. c

- *Union Transport Minister Nitin Gadkari has recently announced his Ministry's approval of a 'green tax' on vehicles of specified vintage, as a means of dissuading people from using polluting vehicles.*

Highlights of the policy

- At the time of fitness certification renewal, an additional green tax of 10%-25% on the road tax payable will be collected from commercial transport vehicles that are older than eight years.
- For personal vehicles the green tax will be collected after 15 years.
- The policy provides exemptions for tractors, harvesters and tillers used in farms, hybrid, electric, ethanol, liquefied petroleum gas (LPG) and compressed natural gas (CNG)-powered vehicles.
- It also provides a lower green tax for public transport vehicles such as buses.
- Conversely, a higher additional 50% of road tax is proposed for vehicles in highly polluted cities, as well as differential tax based on fuel and vehicle type, such as diesel.
- Vehicles of government departments and public sector units that are older than 15 years are to be deregistered and scrapped.
- Green tax funds are to be kept in a separate account to help States measure pollution and tackle it.
- State governments must now comment on the proposal.
- The policy is scheduled to come into force on April 1, 2022.

3. a

Supernova

- All stars burn nuclear fuel in their cores to produce energy.
- The heat generates internal pressure which pushes outwards and prevents the star from collapsing inward due to the action of gravity on its own mass.
- But when the star ages and runs out of fuel to burn, it starts to cool inside.
- This causes a lowering of its internal pressure and therefore the force of gravity wins; the star starts to collapse inwards.
- This builds up shock waves because it happens very suddenly, and the shock wave sends the outer material of the star flying.
- This is what is perceived as a supernova. This happens in very massive stars.
- In stars that are more than eight times as massive as the Sun, the supernova is accompanied by a collapsing of the inner material of the dying star – this is also known as core collapse supernova or Type II supernova.
- The collapsing core may form a black hole or a neutron star, according to its mass.

4. c

Nuclear Medicines

- Under this stream of medicine the radiotracer travels through the area being examined and gives off energy in the form of gamma rays.
- Such gamma rays are detected by a special camera and a computer to create images of the inside of your body.
- Nuclear medicine imaging provides unique information that often cannot be obtained using other imaging procedures and offers the potential to identify disease in its earliest stages.
- Recently Bhabha Atomic Research Centre (BARC) has "evolved" the design for the country's first public private partnership research reactor for production of nuclear medicines.



- This project will be a major step towards making India self-reliant in key radio isotopes used in medical and industrial applications.
- At present, India produces all major isotopes in the country under the aegis of BARC.

5. c

Pattachitra Painting

- Pattachitra style of painting is one of the oldest and most popular art forms of Odisha and Bengal.
- The name Pattachitra has evolved from the Sanskrit words patta, meaning canvas, and chitra, meaning picture.
- All colours used in the Paintings are natural.
- In bengal tradition it is centred around Kalighat (in Kolkata), the theme is not much devotional.
- In odisha tradition it is centred around Puri.
- These paintings are based on Hindu mythology and specially inspired by Jagannath and Vaishnava sect.

6. b

National e-Vidhan Assembly (NeVA)

- e-Vidhan is a Mission Mode Project (MMP) included in Digital India Programme and Ministry of Parliamentary Affairs (MoPA) is the 'Nodal Ministry' for its implementation in all the States/ UTs with Legislatures.
- Funding of NeVA is on the pattern of Central Sponsored Scheme i.e. 60:40; and 90:10 for North East & hilly States and 100% for UTs.
- The funding for e-Vidhan is provided by the MoPA and technical support by Ministry of Electronics and Information Technology (MeitY).
- NeVA aims to bring all the legislatures of the country together, in one platform thereby creating a massive data depository without having the complexity of multiple applications.

7. b

Hydrogen Energy Mission

- The Union Budget proposed to launch a Hydrogen Energy Mission in 2021-22 for generating hydrogen from **green power sources**.
- Hydrogen can be generated from many sources, but India stresses on the hydrogen sources from renewable sources.
- In the longer term, solar energy and biomass can be used more directly to generate hydrogen.
- This mission would decarbonise heavy industries, and also holds the key to clean electric mobility that doesn't depend on rare minerals.
- Hydrogen can act as an energy storage option, which would be essential to meet intermittencies (of renewable energy) in the future.
- Green hydrogen energy is vital for India to meet its Nationally Determined Contributions and ensure regional and national energy security, access and availability.
- The method of producing hydrogen through methane reforming will result in significant carbon dioxide emissions.
- There is the potential to capture these emissions using carbon capture and storage (CCS) technology, although this is relatively underdeveloped in India.

8. a

Star Dust 1.0

- It has a mass of 250 kg and can carry a maximum payload mass of 8 kg.
- It is manufactured by bluShift, an aerospace company that is developing rockets that are powered by bio-derived fuels.



- These rockets will help to launch small satellites called cubesats into space in a way that is relatively cheaper than using traditional rocket fuel and is less toxic for the environment.
- Broadly, biofuels are obtained from biomass, which can be converted directly into liquid fuels that can be used as transportation fuels.

9. c

Lingaraj Temple

- It is an ancient temple dedicated to Lord Shiva, situated in the city of Bhubaneswar.
- The temple was built in the 7th century by the King JajatiKeshari.
- The temple marks the culmination of the temple architecture in Bhubaneswar which was the cradle of the Kalinga School of Temple Architecture.
- The temple can broadly be divided into four main halls i.e.
 1. GarbaGriha (Sanctum Sanctorum),
 2. YajanaMandapa (the hall for prayers)'
 3. NatyaMandapa (dance and music hall)
 4. BhogaMandapa (where devotees can have the Prasad (offering) of the Lord).
- The harmony between the two sects of Hinduism, Shaivism, and Vaishnavism, is seen in this temple where the deity is worshipped as Harihara, a combined form of Vishnu and Shiva.
- It signifies the syncretisation of Shaivism and Vaishnavism sects in Odisha.

10. c

Cyber Insurance Policy

- A committee set up by the Insurance Regulatory and Development Authority of India (IRDAI) has recommended the introduction of a cyber-insurance policy.
- In October 2020, the IRDAI had set up a committee for cyber liability insurance under P Umesh.
- Cyber insurance policy is a risk transfer mechanism for cyber risk.
- Cyber risk is commonly defined as exposure to harm or loss resulting from breaches of or attacks on information systems.
- This policy will protect the policyholders from cybercrimes.

11. c

One Person Companies (OPCs)

- Section 2(62) of Companies Act defines a one-person company as a company that has only one person as to its member.
- Furthermore, members of a company are nothing but subscribers to its memorandum of association, or its shareholders.
- Recently, the Ministry of Corporate Affairs has amended the One Person Companies (OPCs) rules after the announcement made by Finance Minister in Union Budget 2021-22.
- The new rules have reduced the residency limit for an Indian citizen to set up an OPC from 182 days to 120 days.
- The amendment will allow Non-Resident Indians (NRIs) to incorporate OPCs in India.
- The rule relating to voluntary conversion unless OPC has completed two years from the date of incorporated is proposed to be omitted.
- Thus the conversion of One Person Company into a Public company or a Private company shall be permitted anytime.

12. d

Global Ecosystem Dynamics Investigation (GEDI)



- It is NASA mission to measure how deforestation has contributed to atmospheric CO₂ concentrations.
- A full-waveform LIDAR was attached to the International Space Station to provide the first global, high-resolution observations of forest vertical structure.
- This will allow scientists to map habitats and biomass, particularly in the tropics, providing detail on the Earth's carbon cycle.

13. c

Democracy Index 2020

- Democracy Index had classified 167 countries, as full democracies, flawed democracies, hybrid regimes and authoritarian regimes.
- It looks at the impact of the Covid-19 pandemic on freedom and democracy around the world.
- India had slipped two places to 53rd position in the Democracy Index.
- This is due to the democratic backsliding by authorities and crackdowns on civil liberties have led to a further decline in the country's ranking.
- India has been classified as a 'flawed democracy' along with countries such as the U.S., France, Belgium and Brazil.
- Reporters without Borders releases world press freedom Index.

14. a

- Startup India Seed Fund Scheme (SISFS) aims to provide financial assistance to startups for proof of concept, prototype development, product trials, market entry and commercialization.
- Start-ups can avail up to Rs.70 lakh and incubators would get up to Rs. 5 crore as grant and if they are able to spend this in three years, they would get another Rs. 5 crore.
- The Seed Fund will be disbursed to eligible startups through eligible incubators across India.
- It is implemented by Ministry of Commerce and Industry.

15. a

- The Bill will apply to the major ports of Chennai, Cochin, Jawaharlal Nehru Port, Kandla, Kolkata, Mumbai, New Mangalore, Mormugao, Paradip, V.O. Chidambaranar, and Vishakhapatnam.
- The Bill provides for the creation of a Board of Major Port Authority for each major port which will replace the existing port trusts.
- The Bill provides that the Board may use its funds for providing social benefits.
- This includes development of infrastructure in areas such as education, health, housing, and skill development.

16. c

- 'MeriSaheli' initiative was launched as Pilot Project by Railway Protection Force (RPF) across South Eastern Railway for security of women passengers in trains originating in that zone.

17. b

- The Ministry of Social Justice and Empowerment implements the National Fellowship for Scheduled Castes (NFSC).
- It provide Fellowships to Scheduled Caste students pursuing M.Phil and Ph.D.
- It is a Central Sector Scheme and funds are not allocated State wise.

18. c

- NITI Aayog has constituted a sub-group to prepare a National Action Plan for Migrant Workers.
- Occupational Safety, Health and Working Conditions Code, 2020 notified in 2020 subsumed Inter-state Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979.



- It provides for decent working conditions, minimum wages, grievances redressal mechanisms, protection from abuse and exploitation, enhancement of the skills and social security to all category of organised and unorganised workers including Migrant workers.
- The relevant provisions of the Code are applicable to every establishment in which 10 or more inter-state migrant workers are employed or were employed on any day of the preceding 12 months.

19.b

Koch Rajbongshis

- They traced their roots to the Kamata kingdom, which comprised parts of Assam, West Bengal and adjoining territories.
- The community was dominant and ruled their territory of Kamatapur during the medieval period.
- It was comprised of a large part of Bangladesh, West Bengal, Bihar and India's north-east.
- They are found in Assam, Meghalaya, West Bengal and Bihar, and in Bangladesh, Nepal and some parts of Bhutan.
- They were primarily animist, but later on they followed Hinduism/Sanatana (both Shaiva and Vaishnavite).

20. b

- Hilsa Fishes are Anadromous - lives most of the time in ocean and move towards fresh water for spawn during rainy season.
- Catadromous - Spawn in the marine environment and move to the riverine environment to mature over a several-year period.
- The construction of Farakka barrage in the River Ganga disrupted the journey of Hilsa Fishes which would swim the Ganga upstream to Allahabad and Agra.
- There are documented records of hilsa migration to Godavari and Cauvery river.

21.b

- Tholpavakkothu is a shadow leather puppet theatre form, popular in the Palakkad and neighbouring regions.
- It is preserved as a family tradition by the Pulavars.
- For the first time, the famous shadow leather puppets will be shown with the help of robots.
- The first such robotic leather puppet was installed at the Palakkad District Heritage Museum.

22.c

- VigyanJyoti programme is a new initiative to encourage girls to take interest in science and build career.
- It was launched by the Department of Science & Technology (DST) to create a level-playing field for the meritorious girls to pursue STEM.
- It had been running successfully in 50 JawaharNavodayaVidyalayas (JNV) since December 2019 and has now been expanded to 50 more JNVs for the year 2021-22.

23.c

- Longitudinal Aging Study in India (LASI), a longitudinal survey to examine aging and retirement among India's population aged 45 and above.
- According to the report, every 20th Indian family has a history of cancer and it is more prevalent in urban areas compared to rural India.

24. d

Sandes

- National Informatics Centre has launched an instant messaging platform called Sandes on the lines of WhatsApp.
- It can be used for all kinds of communications by anyone with a mobile number or email id.
- Open initially only to government officers, it has now been released for the common public as well.



- In the app there is no option to transfer the chat history between two platforms, the chats on government instant messaging systems or GIMS can be backed up to a users' email.
- GIMS, like other instant messaging apps in the market, uses a valid mobile number or email id to register the user for the first time.
- Further, as an additional safety feature, it allows a user to mark a message as confidential, which, the app's description says, will allow the recipient to be made aware the message should not be shared with others.
- The confidential tag, however, does not change the way the message is sent from one user to another.

25. b

Digital Services Tax (DST)

- It is a 2% tax that India has charged since April 2020 on revenues from digital services.
- It is applicable only to non-resident companies.
- The digital services offered in India, including digital platform services, digital content sales, and digital sales of a company's own goods, data-related services, software-as-a-service, and several other categories of digital services.
- It is aimed at ensuring that non-resident, digital service providers pay their fair share of tax on revenues generated in the Indian digital market.
- Ministry of Commerce & Industry clarifies that there is no retrospective element as the levy was enacted before the first day of April, 2020, which is the effective date of the levy.
- The DST does not have extra-territorial application as it applies only on the revenue generated from India.

26.a

Mandarin Duck

- It is considered the most beautiful duck in the world, was first identified by Swedish botanist, physician and zoologist Carl Linnaeus in 1758.
- Though it's native to East Asia, now it has established populations in Western Europe and America also.
- It is mentioned as Least Concern under IUCN Red list.
- The duck, however, rarely visits India as it does not fall in its usual migratory route.

27.c

Digital Intelligence Unit (DIU)

- It aims to coordinate with various law enforcement agencies, financial institutions and telecom service providers in investigating any fraudulent activity involving telecom resources.
- It will deal with cases of financial fraud, especially in the digital payments space.
- It would also ensure strict compliance of the Telecom Commercial Communications Customer Preferences Regulations (TCCCPR) 2018 which provides a revised regulatory framework aimed at regulating 'unsolicited commercial communication' (UCC) in India.

Unsolicited Commercial Communication (UCC)

- Unsolicited communications or spam refers to emails or mobile messages that advertise products and services to a large group of recipients without their prior request or consent.
- The issue of UCC has been a major area of concern for the Telecom Ministry as well as the Telecom Regulatory Authority of India (TRAI).
- It has from time to time fined telecom operators for not following its directives on stopping UCC.

28.b

KhwajaMoinuddin

- MoinuddinHasanChishti was born in Sijistan (modern-day Sistan) in Iran in 1141-42 CE.
- Chishtiya Order was founded in India by KhwajaMoin-Uddin Chishti.



- It emphasised the doctrine of the unity of being with God (wahdat al-wujud) and members of the order were also pacifists.
- They abstained from connection with the secular state.
- Recitation of the names of God, both aloud and silently, formed the cornerstone of Chishti practice.
- His shrine in Ajmer has been visited by rulers like Muhammad bin Tughlaq, Sher Shah Suri, Akbar, Jahangir, Shah Jahan, Dara Shukoh and Aurangzeb.

Major Sufi Orders

- **Suhrawardi Order** - It was founded by Sheikh Shahabuddin Suhrawardi Maqtul.
- The Suhrawardis, unlike the Chishtis, accepted maintenance grants from the Sultans.
- **Naqshbandi Order** - It was founded by the Khwaja Baha-ul-din Naqsh band.
- From the beginning, the mystics of this Order stressed on the observance of the Shariat.
- **Qadiriyya Order** - It was popular in Punjab.
- Sheikh Abdul Qadir of Badaun founded it in the 14th century, they were supporters of the Mughals under Akbar.

29.d

Committee on World Food Security (CFS)

- It is the foremost inclusive international and intergovernmental platform for all stakeholders to work together to ensure food security and nutrition for all.
- The Committee reports to the United Nations (UN) General Assembly through the Economic and Social Council (ECOSOC) and to the Food and Agriculture Organisation (FAO) Conference.
- Voluntary Guidelines on Food Systems and Nutrition (VGFSyN) aim to support countries to eradicate hunger and malnutrition in all its forms by utilizing a food systems approach.
- The Guidelines highlight the complex and multidimensional interlinkages between sustainable food systems and healthy diets.

30. c

Housing Finance Companies

- A HFC has been defined to mean a non-banking financial company engaged in the housing finance business and which fulfills the following conditions:
- Its financial assets (in the business of providing finance for housing) constitute not less than 60% of its total assets; and
- Out of the total assets (netted off by intangible assets), not less than 50% should be by way of housing financing for individuals.
- Banks are mandated by the RBI, to follow the repo rate-based lending rate for all loans but loans by HFCs and NBFCs are linked to the prime lending rate (PLR).
- The banks cannot lend at rates below the Repo Rate but there is no such restriction on PLR-linked loans.
- The provisions for the regulation of HFCs are provided under the National Housing Bank Act, 1987 with the National Housing Bank being the regulatory authority for HFCs.
- Recently, the RBI has issued directives to housing finance companies (HFCs) on maintenance of liquidity coverage ratio, risk management, asset classification and loan-to-value ratio.

31.b

India Energy Outlook Report

- The India Energy Outlook 2021 is a new special report from the International Energy Agency (IEA's) World Energy Outlook series.
- It explores the opportunities and challenges ahead for India as it seeks to ensure reliable, affordable and sustainable energy for a growing population.

- Presently, India is the fourth-largest global energy consumer behind China, the United States and the European Union.
- India's share in the growth in renewable energy is the second-largest in the world, after China.

Highlights of the report are

1. India will make up the biggest share of energy demand growth at 25% over the next two decades, as it overtakes the European Union as the world's third-biggest energy consumer by 2030.
2. India's oil demand is seen rising by 74% to 8.7 million barrels per day by 2040 under the existing policies scenario.
3. A five-fold increase in per capita car ownership will result in India leading the oil demand growth in the world.
4. India will become the fastest-growing market for Natural gas, with demand more than tripling by 2040.
5. Coal currently dominates India's electricity sector, accounting for over 70% of overall generation.
6. Coal demand is seen rising to 772 million tonnes in 2040 from the current 590.

32.a

Giant Leatherback Turtle

- It is the largest of the seven species of sea turtles on the planet.
- It is most long-ranging turtle which are found in all the oceans except the Arctic and the Antarctic Oceans.
- It is listed as 'Vulnerable' under the IUCN Red List of Threatened Species.
- They are also listed in Schedule I of India's Wildlife Protection Act, 1972.
- The large numbers of Giant Leatherback Turtle have been recorded nesting on the long and wide beaches at the mouth of the Dagmar and Alexandira Rivers on the west coast and at the mouth of the Galathea River along its south eastern coast of Andaman Nicobar Islands

33. b

Saka Nankana Sahib

- Nankana Sahib, the birth place of first Sikh guru, Guru Nanak Dev.
- It also the site of the first big agitation by the Shiromani Gurdwara Parbandhak Committee (SGPC) to take back control of gurdwaras from mahants backed by the British.
- The SGPC came to existence in November 1920, a month after Sikhs removed partial restrictions on Dalit rights inside Golden Temple in Amritsar.
- It started gurdwara reform movement which was aimed at taking possession of historical Sikh Gurdwaras, which had turned personal property of the priests, who were called mahants.

34. c

Transatlantic Alliance

- The Transatlantic Alliance has been the cornerstone of the post-World War II world order.
- It is a real-world expression of West - of a sense that both sides of Atlantic are in it together.
- It is the foundation on which the collective security and shared prosperity of the USA and Europe are built.
- Transatlantic Trade and Investment Partnership (T-TIP) is an ambitious, comprehensive, and high-standard trade and investment agreement being negotiated between the United States and the European Union (EU).
- The TTIP negotiations were launched in 2013 and ended without conclusion at the end of 2016.

35.b

Chandrayaan-3

- The Chandrayaan-1 Moon Mission, launched in 2008, data indicates that the Moon's poles are home to water.
- Chandrayaan-2, aimed at landing a rover on uncharted Lunar South Pole, was launched in 2019 on board the country's most powerful geosynchronous launch vehicle.



- Chandrayaan 3 lander will land at the same location as the Chandrayaan 2, the lunar South Pole, which is a singularly promising part of the moon's surface.
- Unlike its predecessor, Chandrayaan-3 will not have an orbiter, but will only include a lander and rover.

Laser Doppler Velocimeter (LDV)

- It is the technique of using the Doppler shift in a laser beam to measure the velocity in transparent or semi-transparent fluid flows or the linear or vibratory motion of opaque, reflecting surfaces.
- The measurement with laser Doppler anemometry is absolute and linear with velocity and requires no pre-calibration.

36.a

Hucheshwara Temple

- It is a Hoysala period temple located in Karnataka, an elegant specimen of 12th century Hoysala architecture.
- The temple is located close to Hoysaleswara temple and is more than 900 years old.
- The temple was built in 1173 A.D. by a rich officer called Buci (or Buchiraja), to celebrate the coronation of Hoysala King VeeraBallala II.
- From the inscriptions on the premises, it is evident that these two temples had been commissioned by Buci's older brothers, Govinda and Naka.

37.c

Factors of high rainfall in Cherrapunji

- Cherrapunji (elevation 1313 m) and Mawsynram (elevation 1401.5 m) are located on the southern slopes of the east Khasi Hills in Meghalaya.
- Meghalaya is a mountainous state with numerous valleys and highland plateaus.
- Elevation in the plateau region ranges between 150 m to 1,961 m, with the central part comprising the Khasi Hills with the highest elevations.
- The northward moving moist winds from the Bay of Bengal passing over the plains of Bangladesh are forced to converge in the narrow valleys of the Khasi Hills with orography providing forced ascent that causes condensation, formation of clouds resulting in rain on the windward side of the slope.
- A recent study that looked at the rainfall pattern in the past 119 years found a decreasing trend at Cherrapunji (Meghalaya) and nearby areas.

38.a

Land Titling systems in India

- Land Titling is the generic term used to describe the programs implemented by the government to enable individuals and government to efficiently trade in rights in land and property.
- **Presumptive Land Titling** - India currently follows this system, it means that land records are maintained, with information on possession, which is determined through details of past transactions.
- Ownership is established on the basis of current possession.
- Registration of land is actually a registration of transactions, such as sale deeds, records of inheritance, mortgage and lease.
- Holding registration papers does not actually involve the government or the legal framework guaranteeing the ownership title of the land.
- **Conclusive Land titling system** under this land records designate actual ownership.
- The ownership title is granted by the government, which takes the responsibility for accuracy.
- Once a title is granted, any other claimant will have to settle disputes with the government, not the title holder.
- The government may provide compensation to claimants in case of disputes, but the title holder is not in any danger of losing ownership.
- Recently NITI Aayog has formulated model bill on conclusive land titling.



39.a

Black Necked Cranes

- Both the sexes in the black necked crane are almost of the same size but male is slightly bigger than female.
- The upper long neck, head, primary and secondary flight feathers and tail are completely black and body plumage is pale gray/whitish.
- A conspicuous red crown adorns the head.
- In 2020, a re-assessment of the crane's population led its status to change from Vulnerable to Near Threatened on the IUCN Red List.
- The bird is revered by the community of Monpas (major Buddhist ethnic group of Arunachal Pradesh) as an embodiment of the sixth Dalai Lama (Tsangyang Gyatso).
- Monpas inhabit the West Kameng and Tawang districts, are essentially Buddhists who follow the Mahayana sect.
- The high altitude wetlands of the Tibetan plateau, Sichuan (China), and eastern Ladakh (India) are the main breeding ground of the species, the birds spend winter at lower altitudes.
- In Bhutan and Arunachal Pradesh, it only comes during the winters.
- In Arunachal Pradesh, it can be seen in West Kameng district and Tawang district.

40.d

Acute Encephalitis Syndrome (AES)

- AES is characterized by an acute onset of fever and clinical neurological manifestation that includes mental confusion, disorientation, delirium, or coma.
- Viruses have been mainly attributed to be the cause of AES in India although other sources such as bacteria, fungus, parasites, spirochetes, chemical, and toxins have been reported over the past few decades.
- In some cases, encephalitis may be the result of an immune system disorder.
- The causative agent of AES varies with season and geographical location, and predominantly affects population below 15 years.
- Mild cases may cause no symptoms or mild flu-like symptom and severe cases can be life-threatening.

41.a

Polar vortex

- It is described as a whirling cone of low pressure over the poles that is strongest in the winter months due to the increased temperature contrast between the polar regions and the mid-latitudes, such as the US and Europe.
- The polar vortex spins in the stratosphere.
- Usually, when the vortex is strongest, cold air is less-likely to plunge deep into North America or Europe.
- But occasionally, the polar vortex is disrupted and weakens, due to wave energy propagating upward from the lower atmosphere.
- When this happens, the stratosphere warms sharply in an event known as sudden stratospheric warming, in just a few days, miles above the Earth's surface.
- The warming weakens the polar vortex, shifting its location somewhat south of the pole or, in some instances, 'splitting' the vortex up into 'sister vortices'.
- A warmer Arctic, in turn, favours more severe winter weather in the Northern Hemisphere mid-latitudes including the eastern US.
- The deep freeze can be caused by the weakening polar vortex, a swirling mass of cold air over a large low-pressure area around the North and South Poles.

42.c

Findings on Sun's Rotation

- The scientists have estimated how the Sun has rotated over a century from data extracted from old films and photographs that have been digitized.
- The tangles in the magnetic field lines can produce strong localized magnetic fields and when the Sun's magnetic field gets twisted, there are lots of sunspots.
- The sunspots which form at the surface with an 11-year periodicity are the only route to probe the solar dynamo or solar magnetism inside the Sun and measure the variation in solar rotation.
- The team compared the consistent digitized data with manual data of rotation taken earlier and said that they have been able to differentiate the behaviours of the bigger and smaller solar spots.
- Recently, the researchers from the Aryabhata Research Institute of Observational Sciences (ARIES) have used the digitized data of Kodaikanal Solar Observatory in order to probe Sun's rotation over the Century.

Kodaikanal Solar Observatory

- It is a Solar Observatory of the **Indian Institute of Astrophysics**, located in **Palani range of hills**.
- It was established in **1899 as a Solar Physics Observatory**.

43.a

Qualified Institutional Buyers

- Currently, the Indian markets have the concept of Qualified Institutional Buyers (QIBs), which these investors enjoy greater market access.
- However, an individual investor cannot obtain the QIB status.
- They are those institutional investors who are generally perceived to possess expertise and the financial capacities to evaluate and invest in the capital markets.

Accredited Investor

- The concept of accredited investor will provide QIB-like status to individual investors.
- Accredited investors, also called qualified investors or professional investors, are those who have an understanding of various financial products and the risks and returns associated with them.

44.b

Blank- Cheque Company

- Special Purpose Acquisition Company (SPAC), or a blank-cheque company aims to raise money in an Initial Public Offering (IPO), and at this point in time, it does not have any operations or revenues.
- Money raised through this company is kept in an Escrow account, which can be accessed while making the acquisition.
- If the acquisition is not made within two years of the IPO, the SPAC is delisted and the money is returned to the investors.
- These are attractive to investors, despite them essentially being shell companies, as the blank-cheque companies are people sponsoring.

Escrow Account

- It is a legal concept describing a financial instrument whereby an asset or escrow money is held by a third party on behalf of two other parties that are in the process of completing a transaction.
- The third-party holds the funds until both parties have fulfilled their contractual requirements.
- Escrow is associated with real estate transactions, but it can apply to any situation where funds will pass from one party to another.

45. b

Asia-Pacific Personalised Health Index

- Recently, the Economist Intelligence Unit (EIU) has released 'Asia-Pacific Personalised Health Index'.
- The index measures the readiness of 11 health systems across the region i.e. Australia, China, Japan, India, Indonesia, Malaysia, Singapore, South Korea, Taiwan, Thailand and New Zealand.



- The index ranks countries in adopting personalised healthcare, enabling the right care to be tailored to the right person at the right time.
- It measures performance against 27 different indicators of personalised health across four categories called 'Vital Signs'.
- It includes Policy Context, Health Information, Personalised Technologies and Health Services.
- The index indicated that Singapore performed highest overall of the geographies measured.
- India ranked 10th out of 11 Asia Pacific countries.

46. c

Monitoring the Illegal Killing of Elephants (MIKE) Program

- The MIKE Programme was established by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1997.
- MIKE programme measures the levels, trends and causes of elephant mortality.
- The duration of the program was between May 2017 – December 2019.
- It provides information base to support international decision-making related to conservation of elephants in Asia and Africa.
- The MIKE Programme is entirely dependent on donor support.
- The European Union has been the most important donor for the MIKE programme.
- EU has funded implementation in Africa since its inception in 2001, and in Asia since 2017.
- Funding has also been provided by the US Fish and Wildlife Service and the Governments of Japan, the United Kingdom and China.
- There are currently 28 sites participating in the MIKE programme in Asia, distributed across 13 countries, in which India has 10 sites.

47. a

O-STORMS Project

- Ocean Services, Technology, Observations, Resources, Modelling and Science (O-STORMS) project.
- Ministry of Earth Sciences (MoES) implements the project.
- A polar remotely operated vehicle was indigenously developed for shallow waters of up to 500m depth under the project.
- It was successfully deployed in the Andaman coral islands and the vehicle was successfully manoeuvred in the undulating reef terrain to record high quality underwater visuals of coral reef biodiversity with spectral irradiance.

48. b

Mission Poshan 2.0

- It will prioritize 112 aspirational districts, will develop practices that will nurture health, wellness and immunity of children and pregnant women thereby making a concerted effort towards eradicating malnutrition from its roots.
- The PoshanAbhiyan was launched in 2017-18 in an effort to reduce stunting in children aged between zero and six years to 25 per cent, from 38.4 per cent by 2022.
- Similarly, the ministry had launched the SNP as part of the Integrated Child Development Services (ICDS) in 2009.
- This scheme targets children (from six months to six years) and pregnant and lactating mothers.

49. a

Rohini Commission



- OBCs are granted 27% reservation in jobs and education under the central government.
- Rohini Commission was constituted on October 2, 2017, the terms of reference of the commission are as follows
- To examine the extent of inequitable distribution of benefits of reservation among the castes or communities included in the broad category of OBCs with reference to such classes included in the Central List;
- To work out the mechanism, criteria, norms and parameters in a scientific approach for sub-categorisation within such OBCs;
- To take up the exercise of identifying the respective castes or communities or sub-castes or synonyms in the Central List of OBCs and classifying them into their respective sub-categories.
- To study the various entries in the Central List of OBCs and recommend correction of any repetitions, ambiguities, inconsistencies and errors of spelling or transcription.
- The commission is yet to submit its final report to the union government, a hurdle for the Commission has been the absence of data for the population of various communities to compare with their representation in jobs and admissions.

50. c

DNA Technology Bill

- Under the Bill, DNA testing is allowed only in respect of matters listed in the Schedule to the Bill.
- It includes offences under the Indian Penal Code, 1860, and for civil matters such as paternity suits.
- The Bill provides for the establishment of a National DNA Data Bank and Regional DNA Data Banks, for every state, or two or more states.
- Every Data Bank will be required to maintain indices for the following categories of data i.e. a crime scene index, a suspects' or under trials' index, an offenders' index, a missing persons' index, and an unknown deceased persons' index.
- The Bill provides for removal of the DNA profiles of the following persons:
 1. Of a suspect if a police report is filed or court order given;
 2. Of an under trial if a court order is given; and
 3. On written request, for persons who are not a suspect, offender or under trial, from the crime scene or missing persons' index.
