

# Monthly Current Affairs

June- 2020

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# POLITY

## 1. India's Parliament is missing in action

### Context:

- Parliament is the temple of Democracy. The legislature needs to keep a check on the executive by means of questions and deliberations.
- As the world faces the toughest battle of COVID-19, Parliament's activities are suspended. This article speaks about exploring ways of conducting parliamentary meetings.

### Role of the Parliament

- First and foremost, it is the Parliament that checks and challenges the government of the day.
  - \* While introducing the draft Constitution, B.R. Ambedkar explained why the drafting committee had preferred a parliamentary form over the presidential system of governance.
  - \* Over the decades, our Parliament has evolved procedures of accountability including hearings of committees. The fact that Parliament and its committees have not met for over two months indicates the absence of scrutiny of government actions.

### Functioning Parliament matters

- National laws are made by Parliament. The current steps by the central government are being taken under the Disaster Management Act, 2005, which was not designed to handle epidemics.
- The reasoning is that the central government had no choice as there was no other law that provided it with powers to impose a lockdown across the country, which was needed to arrest the spread of the disease.
  - \* This misses the point that Parliament, which was meeting till a day before the national lockdown was announced, could have passed an appropriate Act.
- This is what many other countries have done — an Act with suitable checks and an expiry date, which could be renewed by Parliament, if required.
- The Constitution requires all expenditure by the government to be approved by Parliament. The government has announced a series of measures to address the economic crisis sparked by the health crisis and the lockdown. These have not been subject to parliamentary scrutiny or approval.
- From March to May 2020, central and State governments have issued over 5,000 notifications to deal with the COVID-19 pandemic. The appropriateness of these circulars need to be examined by Parliament and its committees.

### Responsibility of MP

- MPs have a duty to shape policy and guide the government in the national interest. They represent the concerns of people by raising issues in Parliament.
- The country is facing serious challenges on many fronts as a consequence of the pandemic. These include addressing questions on how to stall the epidemic from spreading, how to treat people who are infected, and how to minimise the loss of life to the virus.
- There is also the question of how the economy is impacted, both from the supply side due to the lockdown, and from the demand side as incomes and spending contract.
- There have been several news reports of migrants being mistreated, not provided transport, being harassed by the police — and being stripped of their dignity, even in cases where they have been provided with food and shelter.
- There needs to be concerted action to alleviate the distress. Parliament is the forum where such issues should be discussed and a plan of action agreed upon.

### Practices around the world

- The Canadian Parliament had its first lockdown meeting towards the end of April 2020, with roughly 280 of the 338 Members of Parliament attending through video conference and questioning the government for three hours.
- The British Parliament has adopted a hybrid model of in-person and video attendance.
- Several other countries like France, Italy, Argentina, Brazil, Australia and New Zealand have held sessions either with physical distancing (fewer MPs attend with agreement across parties) or video conferencing or a combination of the two.
- Many others are convening their committees through video-conferencing.
- The Inter Parliamentary Union has documented the processes used by various national parliaments to meet during the pandemic.
- India's Parliament, which prides itself as the apex representative body of the world's largest democracy, is a notable absentee from this list.

### Conducting meetings through video conferencing

- Our Constitution does not prohibit meetings that may require maintenance of physical distancing or remote meetings. It states that the President may summon Parliament "to meet at such time and place as he thinks fit".

- The Rules of Procedure of both Houses require the Secretary-General to issue summons to each member specifying the "date and place for a session" of the House. These enabling clauses can be used to hold hybrid meetings or remote meetings.
- Rule 267 of the Lok Sabha states that committee meetings have to be held in the Parliament building. However, the Speaker has the powers to change the venue.
- Thus, there is no prior parliamentary action required to permit meetings through video-conferencing.

### **Challenges**

- Security is obviously a critical consideration for any application chosen to support the work of parliament.
  - \* Developing internal home-grown tools are one way to mitigate security risks; however, these take time to be put in place.

### **Way forward**

- The question of security and secrecy may come up. The meetings of the Houses are usually telecast live, and there is no issue of confidentiality.
- Rule 266 mandates that all committee meetings have to be held in private, this has become a roadblock for videoconferencing.
  - \* This is essentially to protect the confidentiality of the information shared by the government in the meetings. The argument is that it may be difficult to protect confidentiality in virtual meetings, when members function from different places.
  - \* Officials have also cited the inherent problems with technology that could facilitate breaches.
  - \* Given that large global corporations as well as parliamentary committees of several other countries seem to have solved this problem, there is no reason that the Indian Parliament cannot adopt these solutions.
- All district headquarters are linked with fibre optic lines, so even if there is a problem of connecting the constituency office of MPs, they could use such government facilities.
- Parliament can meet, but with restrictions. These restrictions include: fewer sittings of plenary sessions or committees; fewer parliamentarians and staff in the building.

### **Conclusion**

- India prides itself on being the world's largest democracy as well as the information technology provider to the world. It is imperative that Parliament harness the country's IT strengths to buttress our credentials as a performing democracy.

## **2. Mediation in the age of COVID-19**

### **Context:**

- In the prevailing conditions due to the COVID-19 pandemic, deprived of their natural setting of the courtroom, judges and lawyers have fallen back to talk of virtual courts, so that the bare essential is achieved — the judge being able to hear the particular lawyer.
- All other features of the courtroom are avoided, and thus an essentially public setting is converted to a closed door one.
- The editorial talks about "mediation" as a tool for dispute resolution in the age of COVID-19 pandemic.

### **What is mediation?**

- Mediation is an informal, but structured settlement procedure. It is a form of alternative dispute resolution, resolving disputes between two or more parties.
- A mediator is employed to facilitate and assist parties in reaching an amicable dispute settlement.
- The role of the mediator is to assist the parties in reaching a negotiated agreement.
- Unlike an arbitrator, the mediator is not a decision-maker.

### **Details:**

- Conventional litigation and arbitration are vintage, spanning hundreds of years and generations of judges and lawyers.
- As a process, structured mediation is relatively new, with an existence of barely two to three decades in India, and just a few more worldwide.
- Legislation has given it the legal structure and safeguards, and provided the assurance that the courts will implement mediation agreements.
- India's judges have been enthusiastic embracers of this process.
- Online mediation will enable the mediator and the parties to assemble together, each on their computer screens perhaps hundreds of miles away.
- Discussion can be guided, giving parties and lawyers the opportunity to put forth their views.

### **Advantages of mediation:**

- Mediation is becoming increasingly popular as people begin to observe the benefits of settling outside of court.
- Mediation saves resources and time for all parties involved as well as the judicial system.
- Parties do not have to undergo adjournments and multiple visits to the mediation centre.
- It is the polar opposite of the court process. It tries to achieve consensus between parties to come to an amicable agreement, rather than the win-lose verdict of the adversarial system.

- It focuses on uncovering interests, and eliciting suggestions from the parties themselves for practical solutions to end the dispute.
- At its core is confidential discussion between mediator and parties, and between mediator and individual parties.
- As much as the essential attribute of the formal justice system is the open courtroom hearing, mediation's essence is closed door communication with its guarantee of confidentiality.
- Eliminating complete contact that is possible only in face-to-face meetings, will certainly be of benefit in cases where emotions run high and face-to-face confrontation may increase the conflict.
  - \* That happens often in matrimonial cases, and in family business disputes, where tempers and emotions arising from frayed domestic situations and settings can edge out sensible business logic.
- In the present context, mediation as an alternative dispute resolution mechanism has an inherent flexibility and adaptability.

#### **Concerns:**

Online mediation has a host of advantages, but also bears some cautioning.

- Confidentiality can be compromised since hearings could be recorded.
- Technical glitches and interruptions in the internet services could hinder the effectiveness of the mediation process.
- There are concerns that online communication will exclude the underprivileged, those who cannot afford access to Internet or do not have the capacity or assistance to use it. Such exclusion will be tantamount to denial of access to justice.

#### **Way forward:**

- Service providers have to be vigilant, and strict rules must be laid out to penalise participants for breach.
- Technical glitches have to be minimised, and Internet services must gear up for providing screen clarity and uninterrupted feed.
- If the State and its Courts are going to allow and encourage online mediation to resolve disputes, weaker parties must be assisted and enabled to avail of this facility.

#### **Conclusion:**

- As the entire world is meandering in the dark to find out what the new normal is going to consist of, we may well discover that a good part of the world of dispute resolution has been flipped, and that COVID-19 is the harbinger of change taking online consensual resolution to a higher level. Mediation, however, is an idea whose time has come and is rapidly gaining ground. Perhaps, this cloud (mediation) too has a silver lining.

### **3. The challenge of law enforcement post-COVID-19**

#### **Context:**

- Law enforcement in the post-COVID world.

#### **Details:**

- Law enforcement is as important as healthcare during the current crisis.
- The police have been endowed with the task of ensuring strict observance of guidelines, including physical distancing during the lockdown phase.
- COVID-19 will affect future law enforcement, which will require the management of new patterns of crime.

#### **Overall drop in crime:**

- There has been a sharp reduction in traffic accidents and fatalities caused by such accidents. With anti-social elements confined to their homes, trespass and burglary also became more difficult crimes to commit.
- A survey across nations has indicated a measurable drop in overall crime. Major cities that generally report a high number of crimes found a drop in crime levels during the lockdown period.

#### **New trends:**

- The pandemic and the lockdown have ensured that many crimes have gone down. However, many other crimes have gone up or will assume new forms in the near future.

#### **Domestic violence:**

- There has been the worrying surge in domestic violence cases.
  - \* There was an increase in sexual and gender-based violence in West Africa during the 2013-16 Ebola outbreak.
- There are two major factors for the rise in domestic violence.
  - \* Most men are at home, either without work on in fear of losing their jobs. Data show that domestic violence increases when there is greater unemployment. The fear and insecurity of these men cause tension at home and unfortunately, women become the victims of this tension.
  - \* The non-availability of liquor during the lockdown period, which caused frustration among those men who are habituated to drinking daily, has also been a causative factor.

- Epidemics leave women and girls more vulnerable to violence. As the administration is busy combating the pandemic, there is little help for domestic violence victims during times such as these.

#### **Organized crime:**

- The Global Initiative against Transnational Organized Crime, a network of prominent law-enforcement, governance and development practitioners based in Geneva, believes that the pandemic is both a threat to, and an opportunity for, organised crime, especially illicit drug trade.



- Travel restrictions across borders, especially in Africa, have made international trade in drugs extremely difficult.
- The Global Initiative believes that organised gangs will infiltrate health services and make profits through the sale of prescription drugs that are not otherwise easily available to the public.
  - \* There is large-scale manufacture of ineffective masks and hand sanitizers.

#### **Cybercrime:**

- A notable trend has been the rise in cybercrime.
  - \* New portals have been launched to get people to donate money for the cause of combating COVID-19. These fraudulent sites have been able to cheat a large number of people.

#### **Prison management:**

- A major challenge would be keeping prisons free of the virus.
- Many prisons have taken steps to insulate prisoners who reported positive for the virus from the rest of the inmates.
- A number of human rights activists have said that we need to consider the premature and temporary release of prisoners with some human rights activists even asking for complete evacuation of prisons, irrespective of whether a prisoner tests positive or not. But such a drastic move will make a mockery of the criminal justice system and expose society to many unrepentant violent offenders.
  - \* Recently, the Supreme Court directed the States and Union Territories to constitute high-powered committees to consider releasing convicts who have been jailed up to seven years on parole, in order to decongest prisons.

#### **Conclusion:**

- Therefore, it is critical that law-enforcement officials think of ways of dealing with new challenges in maintaining law and order.
- The COVID experience provides an important lesson for the law enforcement agencies. An active police-public relation can be a critical building block for future.

### **4. The critical role of decentralised responses**

#### **Context:**

- The article analyzes the need for a decentralised response to tackle the crisis brought forth by the COVID pandemic.

#### **Background:**

- COVID-19 has brought to light four major challenges: economic, health, welfare/livelihood and resource mobilisation. These challenges have to be addressed by all tiers of government in the federal polity, jointly and independently.

#### **Significance of decentralized approach:**

- The novel coronavirus pandemic has brought to light the critical role of local governments and decentralised responses.
- In terms of information, monitoring and immediate action, local governments are at an advantage, and hence are better equipped to meet the challenges posed by disasters such as COVID-19.
- The critical role of local governments will have to be recognised by all.

#### **Concerns:**

##### **Governance concerns:**

- The parallel bodies that have come up after the 73rd/74th Constitutional Amendments have considerably distorted the functions-fund flow matrix at the lower level of governance.
- There is lack of clarity in the assignment of functions, functionaries and financial responsibilities to local governments.

##### **Weak local finances:**

- The Economic Survey 2017-18 points out that urban local governments, or ULGs, generate about 44% of their revenue from own sources as against only 5% by rural local governments, or RLGs.
- Per capita own revenue collected by ULGs is about 3% of urban per capita income while the corresponding figure is only 0.1% for RLGs. There is a yawning gap between tax potential and actual collection, resulting in gross underperformance of these institutions.
- In States such as Uttar Pradesh, Bihar and Jharkhand, local tax collection at the panchayat level is next to nil.
- A recent study shows that the share of property tax in GDP has been declining since 2002-03. This portends a wrong signal. The share of property tax in India in 2017-18 is only 0.14% of GDP as against 2.1% in the Organisation for Economic Co-operation and Development (OECD) countries.

##### **Inadequate grants from Finance Commission:**

- The local government grant of Rs. 90,000 crore for 2020-2021 by the 15th FC is only 3% higher than that recommended by the Fourteenth Finance Commission.
- For panchayats there is only an increase of Rs. 63 crore.

##### **Recent measures:**

- The suspension of MPLADS by the Union government for two years is a welcome measure. The annual budget was around Rs. 4,000 crore. The Union Government has appropriated the entire allocation along with the huge non-lapseable arrears which would hamper the resources available at the local levels.
- The imposition of restrictive conditionalities on States availing themselves of the enhanced borrowing limits (3.5% to 5% of Gross State Domestic Product, or GSDP) for 2020-21 would impair state's abilities to finance their plans.

**Way forward:**

- Strategies in tackling the COVID-19 crisis must include local governments being equipped and fiscally empowered.

**1. Resource mobilization:**

- The local governments should be fiscally empowered to ensure the effectiveness of local governance.
- A few suggestions for resource mobilisation are given under three heads: local finance, Members of Parliament Local Area Development Scheme, or MPLADS, and the Fifteenth Finance Commission (FFC).

**Local resource mobilization:**

- Own revenue is the critical lever of local government empowerment.

**Property tax:**

- Property tax forms the major source of local revenue throughout the world.
- Indian States should take necessary steps to enhance and rationalise property tax regime.
- Property tax collection with appropriate exemptions should be a compulsory levy and preferably must cover land. If property tax covers land that will hugely enhance the yield from this source even without any increase in rates.

**Innovative policies:**

- Land monetisation and betterment levy may be tried in the context of COVID-19 in India.

**Bonds:**

- There is a need to incentivize and also appeal to the patriotic sentiments of non-resident Indians and rich citizens to mobilize resources.
  - \* The Resurgent India Bond of 1998 could mobilise over \$4 billion in a few days from NRIs.
- Municipalities and even suburban panchayats can issue a corona containment bond for a period of say 10 years, on a coupon rate below market rate but significantly above the reverse repo rate to attract banks.

**MPLADS scheme:**

- MPLADS scheme funds which was specifically earmarked for local area development, must be assigned to local governments, preferably to panchayats on the basis of well-defined criteria.

**Finance Commission:**

- A special COVID-19 containment grant to the local governments by the FFC to be distributed on the basis of FFC-laid criteria is the need of the hour.
- Currently, the ratio of basic to tied grant is fixed at 50:50 by the commission. In the context of the crisis under way, all grants must be untied for freely evolving proper COVID-19 containment strategies locally.

- Further, the 13th Finance Commission's recommendation to tie local grants to the union divisible pool of taxes to ensure a buoyant and predictable source of revenue to LGs must be restored by the commission.

**2. Focus on basic infrastructure:**

- Building health infrastructure and disease control strategies at the local level need to be focused on.

**3. Addressing governance concerns:**

- There is a need for better functional mapping among the different organs of governance.
- Flood, drought, and earthquakes are taken care of by the Disaster Management Act 2005 which does not recognize epidemics. The new pandemic is a public health challenge of an unprecedented nature along with livelihood and welfare challenges. The 2005 Act may have to be modified to accommodate the emerging situation.

**5. Migrants should not be prosecuted****Context:**

- The Supreme Court has said that migrant workers should not be prosecuted for trying to reach home amid the national lockdown.
- The court passed the order after suo motu taking cognisance of the migrant workers' exodus.

**SC order**

- A Bench led by Justice Ashok Bhushan directed the Centre and the States to withdraw any complaint or prosecution lodged against migrant labourers, under Section 51 of the Disaster Management Act, (Punishment for obstruction) who had set out on foot from big cities for their native villages to escape starvation, unemployment and disease during the pandemic.
- The court said "society as a whole was moved by their miseries and difficulties".
- The Bench also ordered the States and the UTs to bring the stranded migrant workers home within the next 15 days.
- It ordered the Railways to provide the States with more Shramik Special trains to transport migrant workers.
- The Bench directed that counselling centres should be set up to reach out to them and explain the various schemes framed for their rehabilitation and employment.
- The States and UTs were directed to conduct extensive skill-mapping of the returned workers.



**On High Courts**

- In a retort to the government criticism of High Courts running a “parallel government” with their orders on migrants, the Supreme court said that the High Courts, as constitutional courts, were well within their jurisdiction to take cognisance of the violation of fundamental rights of the migrant workers and there is no doubt that those proceedings would proceed.

**6. How are the Rajya Sabha polls different?****Context:**

- There are several features that distinguish elections to the Council of States, or the Upper House of Parliament, from the general elections. This article discusses the salient aspects of the Rajya Sabha elections.

**Elections:**

- The Legislative Assemblies send a batch of new members to the Upper House every two years for a six-year term.
- A third of Members of Parliament in the Rajya Sabha (which is a permanent House and is not subject to dissolution), from each State retire once in two years and polls are held to fill up the vacancies.
- In addition, vacancies that arise due to resignation, death or disqualification are filled up through bypolls after which those elected serve out the remainder of their predecessors' term.

**Election system:**

- Voting is by single transferable vote, as the election is held on the principle of proportional representation.
  - \* A single transferable vote means electors can vote for any number of candidates in order of their preference.
  - \* This method avoids the principle of majority, which would mean that only candidates put up by ruling parties in the respective States will be elected.
- A candidate requires a specified number of first preference votes to win. To qualify, a candidate needs one point more than the quotient obtained by dividing the total value of the number of seats for which elections are taking place plus one.
  - \* For instance, if there are four seats and 180 MLAs voting, the qualifying number will be  $180/5 = 36$  votes.
- Normally, the results are clear after one round itself. The extra candidate is eliminated for want of enough first preference votes. However, counting may go to the second round, if more than one candidate fails to get the specified number. In such a situation, the second preference polled by the candidates will be transferred to them with a diminished value. The total value of the votes polled by the remaining candidates both as first and subsequent preferences would be used to decide the winner.

**Electorate:**

- Only elected members of the State Legislative Assemblies can vote in a Rajya Sabha election.
- The Delhi and Puducherry Assemblies (Union Territories with legislative assembly) elect members to the Rajya Sabha to represent the two Union Territories.

**Secret ballot:**

- The Rajya Sabha polls have a system of open ballot, but it is a limited form of openness.
- There is no secret ballot in Rajya Sabha elections as a measure to check rampant cross-voting owing to corruption.
- In the Rajya Sabha election there is the system wherein each party MLA shows his or her marked ballots to the party's authorised agent, before they are put into the ballot box.
- Showing a marked ballot to anyone other than one's own party's authorised agent will render the vote invalid. Not showing the ballot to the authorised agent will also mean that the vote cannot be counted. And independent candidates are barred from showing their ballots to anyone.

**Anti-defection provision:**

- The Supreme Court has ruled that not voting for the party candidate will not attract disqualification under the anti-defection law and stated that as voters, MLAs retain their freedom to vote for a candidate of their choice.
- However, the Court has observed that since the party would know who voted against its own candidate, it is free to take disciplinary action against the legislator concerned.

**'None of the Above', or NOTA:**

- The 'None of the Above', or NOTA system does not apply to the Rajya Sabha polls.
- The Election Commission of India (ECI) had previously issued two circulars giving Rajya Sabha members the option to press the NOTA button in the Upper House polls.
- However, in 2018, the Supreme Court of India struck down the provision, holding that the 'none of the above' option is only for general elections held on the basis of universal adult suffrage, and cannot be applied to indirect elections based on proportional representation.

**Other aspects:**

- The Supreme Court has ruled that a member can vote in a Rajya Sabha election even before taking oath as legislator. It ruled that voting at the Rajya Sabha polls, being a non-legislative activity, can be performed without taking oath. The court has held that a person becomes a member as soon as the list of elected members is notified by the ECI. Further, a member can also propose a candidate before taking oath.

## 7. **Secrecy of ballot is key to free and fair elections: SC**

### **Context:**

- Supreme Court judgment on rule of secrecy of ballot.

### **Background:**

- During the voting of a no-confidence motion in the zila panchayat of the Panchayat Adhyaksha in Uttar Pradesh in 2018, it was found that some of the panchayat members had violated the rule of secrecy of ballot. The Panchayat members had either displayed the ballot papers or by their conduct revealed the manner in which they had voted.
- This was challenged in the Allahabad High Court, which had annulled the vote of no confidence. This judgment of the Allahabad High Court was challenged in the Supreme Court.

### **Details:**

- The Supreme Court has ordered a re-vote of the motion within the next two months to be conducted by the secret ballot system. It ordered the Allahabad District Judge or his nominee to act as the presiding officer.
- The Supreme Court referred to Section 28(8) of the Uttar Pradesh Kshettra Panchayat and Zila Panchayat Adhiniyam, 1961. This provision states that a motion of no confidence shall be put to vote in the prescribed manner by secret ballot.
- Section 94 of the Representation of the People Act also upholds the privilege of the voter to maintain confidentiality about her choice of vote.

### **Important observations:**

- In its judgment, the Supreme Court has made some important observations.

### **Free and fair elections:**

- The Court noted that even a remote or distinct possibility that a voter can be forced to disclose for whom she has voted would act as a positive constraint and a check on the freedom to exercise of franchise.
- The Court held that the choice of a voter should be free and the secret ballot system in a democracy ensures it. It held the secrecy of ballot as the cornerstone of free and fair elections and the principle of secrecy of ballots as an important postulate of constitutional democracy.

### **Voters' privilege:**

- The Supreme Court judgment notes that a voter can also voluntarily waive the privilege of non-disclosure. The privilege of secrecy ends when the voter decides to waive the privilege and instead volunteers to disclose as to whom she had voted. No one can prevent a voter from doing so. Nor can a complaint be entertained on this disclosure.

## 8. **Letter and spirit**

### **Context:**

- Issuance of domicile certificates in Jammu and Kashmir.

### **Background:**

- The erstwhile State of J&K had gained special powers to define its 'permanent residents' and restrict land, educational and employment rights only to them.
- Subsequent to changes to Articles 370 and 35A in August 2019, in March 2020, the concept of "permanent resident of the State" was discontinued in J&K.
- As per the new domicile rules, those persons and their children who have resided for 15 years in J&K, or have studied for seven years and appeared in the Class X or XII exam in an educational institution in the UT, are eligible for grant of domicile.

### **Significance of the domicile rules:**

#### **Setting right deprivations:**

- New domicile rules for Jammu and Kashmir have brought succour and hope for a segment of its population that had to contend with fragmented citizenship rights.
  - \* Around two to three lakh people including refugees from Pakistan, sanitary workers resettled from other parts of India were not classified as permanent residents, leading to a denial of opportunities to them in education, employment and politics leading to gross injustice to this section of the society.
- It will help mitigate the historical deprivation of this segment of the population.

#### **Economic development:**

- Movement and settlement of people across political and natural borders have been a constant feature of progress.
- Movement into the region will be largely driven by economic reasons. Economic growth would be aided by the flow of resources and people into the relatively underdeveloped region.

#### **Integration with India:**

- The domicile rules which will help increase the interaction between the region and the rest of India will provide for opportunities for better understanding. This will help the region integrate into the Indian Union not only politically but also psychologically. This would also help India and the region address the internal security issue of terrorism which seems to have deprived a whole generation of the region of its share of peace and development.

### **Concerns:**

- There are concerns that the changes in domicile rules will lead to a huge influx into the region leading to a change in the demographic character of the region.
- There are concerns that there could be dispossession

# ECONOMY

## 1. Banking Regulation (Amendment) Ordinance, 2020

### Context:

- In pursuance of the commitment to ensure safety of depositors across banks, the President has promulgated the Banking Regulation (Amendment) Ordinance, 2020.
- The Ordinance amends the Banking Regulation Act, 1949 as applicable to Cooperative Banks.

### What it intends to do?

- The Ordinance seeks to protect the interests of depositors and strengthen cooperative banks by improving governance and oversight by extending powers already available with RBI in respect of other banks to Co-operative Banks as well for sound banking regulation, and by ensuring professionalism and enabling their access to capital.
- The amendments do not affect existing powers of the State Registrars of Co-operative Societies under state co-operative laws.
- The amendments do not apply to Primary Agricultural Credit Societies (PACS) or co-operative societies whose primary object and principal business is long-term finance for agricultural development, and which do not use the word "bank" or "banker" or "banking" and do not act as drawees of cheques.
- The Ordinance also amends Section 45 of the Banking Regulation Act, to enable making of a scheme of reconstruction or amalgamation of a banking company for protecting the interest of the public, depositors and the banking system and for securing its proper management, even without making an order of moratorium, so as to avoid disruption of the financial system.

### Significance

- The move to bring these urban and multi-State coop. banks under the supervision of the RBI comes after several instances of fraud and serious financial irregularities, including the major scam at the Punjab and Maharashtra Co-operative (PMC) Bank.
  - \* The RBI was forced to supercede the PMC Bank's board and impose strict restrictions.
- The ordinance has been passed with a view to protect the depositors. With this, depositors will get more security.

## 2. Border Adjustment Tax (BAT)

- Border Adjustment Tax means that a tax is levied on imports (goods made overseas) and exports are not taxed.
- It is imposed on imported goods in addition to the customs levy that gets charged at the port of entry.

### Context:

- NITI Aayog member V.K. Saraswat has favoured imposing a Border Adjustment Tax (BAT) on imports to provide a level-playing field to domestic industries.

## 3. Empowered Group of Secretaries (EGoS) and Project Development Cells (PDCs)

### Context:

- The Cabinet has given its approval for setting up of an Empowered Group of Secretaries (EGoS) and Project Development Cells (PDCs) in Ministries/Departments of the Central Government for attracting investments in India.
  - \* This will put in place an investment friendly ecosystem that strongly supports the domestic investor as well as FDI and to give boost to the economy

### Empowered Group of Secretaries (EGoS)

- It has the Cabinet Secretary as the Chairperson and Secretary, Department for Promotion of Industry, and Internal Trade as the Member Convenor. Secretaries of the Department of Commerce, Department of Revenue, and Department of Economic Affairs, and the CEO, Niti Aayog are the Members of this committee.
- The Secretary of Department concerned where investment is coming is to be co-opted in the committee.

### EGoS Objectives:

- To bring synergies and ensure timely clearances from different departments and Ministries.
- To attract increased investments into India and provide investment support and facilitation to global investors.
- To facilitate investments of top investors in a targeted manner and to usher policy stability & consistency in the overall investment environment.
- To evaluate investments put forward by the departments on the basis of their
  - \* project creation
  - \* actual investments that come.
- Further, these departments would be given targets for completion of various stages by the Empowered Group.

### Project Development Cells (PDCs)

- A PDC is approved for the development of investible projects in coordination between the Central Government and State Governments and thereby grow the pipeline of investible projects in India and in turn increase FDI inflows.

- Under the guidance of the Secretary, an officer not below the rank of Joint Secretary of each relevant central line Ministry, who will be in-charge of the PDC will be tasked to conceptualise, strategise, implement, and disseminate details with respect to investable projects

#### PDC Objectives:

- To create projects with all approvals, land available for allocation and with the complete Detailed Project Reports for adoption/investment by investors.
- To identify issues that need to be resolved in order to attract and finalise the investments and put forth these before the Empowered Group.

#### Significance

- This will make India a more investor-friendly destination and to handhold and further smoothen investment inflows into the country.
- It will give a fillip to our domestic industries
- It will give boost to the economy and open up immense direct and indirect employment potential in various sectors

#### **4. Global Economic Prospects (GEP) Report**

- Global Economic Prospects is a World Bank Group flagship report that examines global economic developments and prospects, with a special focus on emerging market and developing economies.
- It is issued twice a year, in January and June.
- The January edition includes in-depth analyses of topical policy challenges while the June edition contains shorter analytical pieces.

#### Context:

- In its Global Economic Prospects (GEP) June 2020 report, the World Bank said that the COVID-19 pandemic is expected to have severe short and long-term effects on economic growth.

#### Emerging Market and Developing Economies (EMDE)

- The report states that EMDEs are especially vulnerable.
- The report said EMDEs face health crises, restrictions and external shocks like falling trade, tourism and commodity prices, as well as capital outflows.
- These countries are expected to have a 3-8% output loss in the short-term, based on studies of previous pandemics, as per the Bank's analysis.
- EMDEs are also expected to witness the spill-over effects of the U.S., the Euro Area and China, which represent almost half of global output, being unlikely to return to pre-pandemic levels of output before the end of 2021.
- If these three big economies simultaneously lose 1% in output, EMDEs (excluding China) are expected to lose 1.3% in their output with the lag of a year, the Bank warned.

- Longer term, there is a risk not just of a drop in the level of output but a lowering of potential output growth, it said.

#### On policy choices

- Including greater debt transparency to invite new investment
- Faster advances in digital connectivity
- A major expansion of cash safety nets for the poor — will help limit the damage and build a stronger recovery.

#### Worst recession since World War II

- The World Bank said the swift and massive shock of the coronavirus pandemic and shutdown measures to contain it have plunged the global economy into a severe contraction.
- It said this would be the most synchronised contraction in per capita output for economies since 1870, estimating a 5.2% contraction in 2020 with a 4.2% rebound next year (2021).
- According to the report, 90% of economies would be in recession, higher than levels seen during the Great Depression of the 1930s.

#### Impact on Poverty

- Sixty million people could be pushed into extreme poverty
- These estimates are likely to rise further

#### On India

- The World Bank expects India's economy to contract 3.2 percent in the current fiscal. It has cited stringent lockdown and spillover from weaker global growth.

#### **5. Government e-Marketplace (GeM)**

#### Context:

- The government's e-commerce platform has made it mandatory for sellers to specify the country of origin while registering new products on the portal.
- This comes against the backdrop of calls to boycott Chinese goods following border clashes between India and China in Ladakh.

#### Details

- The sellers who have already added their products on the marketplace have been asked to update the country of the origin and a warning has been issued stating that products will be delisted if the country of origin is not updated.
- In addition to the country of origin, the e-marketplace has a provision where sellers can list the percentage of local content in products.
- With this new feature, now, the country of origin, as well as the local content percentage, are visible in the marketplace for all items.

#### Extent of local content

- Class I local suppliers (local content greater than 50 per cent)



- Class II (local content greater than 20 per cent)
- Buyers can now reserve any bid for Class I local suppliers
- For bids below Rs 200 crore, only Class I and Class II, local suppliers will be eligible to bid, with Class I suppliers getting purchase preference.

#### Significance

- The decision has been taken to promote 'Make in India' and 'Atmanirbhar Bharat'.

#### 'Make in India' attempt has been futile

- The government's attempts to raise the share of manufacturing in the economy through the 'Make in India' programme have so far failed to significantly boost investment in new, cutting-edge technology-driven or export-oriented industries and instead only taken the country back to import substitution plants making goods predominantly for domestic consumption.
- To that extent, the drive for self-reliance and greater localisation risks once again eroding Indian industry's global competitiveness by placing a premium on 'Indianness' over quality or cost.

#### Pharma Industries

- India is seen as a pharmacy hub of the world and manufacturers drugs which are affordable. But the Indian pharmacy industry depends on China for about 70% of their requirements of bulk drugs and intermediates.
- For India to wean itself off these dependencies will take time.

#### Conclusion

- Attaining genuine self-reliance is a long and capital intensive process that would require far greater investment in education, skill-building and infrastructure.
- For now, policymakers have to tone down any trade-linked rhetoric and give diplomats and military negotiators the room to smoothen ties between India and China.

#### **Government e Marketplace (GeM)**

It is a platform which was launched in 2016 as an online, end to end solution for procurement of commonly used goods and services for all Central Government and State Government Ministries, Departments, Public Sector Units (PSUs) and affiliated bodies.

- The goods procured by the Government range from highly standardized goods like A4 printing paper, printing cartridges and electronic goods like printers and laptops to highly specialized goods like drilling equipment and medical equipment.
- Similarly, for services, the spectrum ranges from standard services such as security services, chauffeur services and gardening services to a more complex set of specialized services such as consulting services and engineering services.

- GeM aims to replicate the offline market on its online platform to create an open market that bring together sellers across the board ranging from established brands to MSEs, individual suppliers, suppliers of innovative products and services and artisans.
- GeM shall permit any seller, registered in India in accordance with prevalent laws and regulations, manufacturing or marketing genuine goods/ services to sell on GeM.
- The GeM platform shall be a trust based portal where the buyer shall hold the responsibility to ensure value for money and timely payment in any purchase made and the seller shall hold the responsibility to ensure the accuracy and integrity of all information shared, the quality of products and services sold and the timeliness of the delivery.
- Government e-Marketplace (GeM) comes under the Union Ministry of Commerce and Industry.

#### Reason behind the GeM initiative

- Need for reform to bring consistency in public procurement.
- Existing malpractices in the system due to buyer-supplier interaction.

#### Significance

- GeM aims to enhance transparency, efficiency and speed in public procurement.

### **6. International Comparison Program (ICP)**

- It is a worldwide statistical partnership to collect comparative price data and compile detailed expenditure values of countries' Gross Domestic Products (GDP), and to estimate Purchasing Power Parities (PPPs) of the world's economies.
- Using PPPs instead of market exchange rates to convert currencies makes it possible to compare the output of economies and the welfare of their inhabitants in real terms (that is, controlling for differences in price levels).

#### Context:

- The World Bank has released new Purchasing Power Parities (PPPs) for reference year 2017, under the International Comparison Program (ICP).
- Globally, 176 economies participated in the 2017 cycle of ICP.

#### Results

- The PPP of Indian Rupee per US\$ at GDP level is now 20.65 in 2017 from 15.55 in 2011.
- The Exchange Rate of US Dollar to Indian Rupee is now 65.12 from 46.67 during the same period.
- The Price Level Index (PLI), used to compare the price levels of economies, of India is 47.55 in 2017 from 42.99 in 2011.

\* PLI is the ratio of a PPP to its corresponding market exchange rate.



**Ranking**

- In 2017, India retained and consolidated its global position, as the third largest economy, accounting for 6.7 percent of global Gross Domestic Product (GDP) in terms of PPPs as against China (16.4%) and United States (16.3%), respectively.
- In the Asia-Pacific region, India in 2017 retained its regional position as the second largest economy accounting for 20.83% of regional GDP in terms of PPPs where China was first and Indonesia was in third position.
- India is also second largest economy in terms of its PPP-based share in regional Actual Individual Consumption and regional Gross Capital Formation – in the Asia-Pacific region.

**Purchasing power parity (PPP)**

- It is a metric used by macroeconomic analysts that compares different countries' currencies through a "basket of goods" approach. PPP allows for economists to compare economic productivity and standards of living between countries.

**7. MSMEs wait for work as demand slumps post lockdown****Context:**

- Challenges faced by the MSMEs during the pandemic.

**Concerns:****Slump in demand:**

- Despite the resumption of production in MSMEs, there is little business. Demand has slumped by large margins.

**Unemployment:**

- A large number of people employed in Micro, Small and Medium Enterprises have lost their jobs due to slump in demand post lockdown.
- Apart from the direct employees who have lost jobs, people indirectly dependent on the functioning of the MSMEs have also lost livelihood opportunities.

**Long recovery time:**

- Given the increasing number of COVID cases and the surrounding uncertainty, it seems possible that it may take months before the ground situation improves. This could deal a severe financial blow to the MSMEs whose financial condition is already fragile.

**Government efforts:**

- Despite the governmental efforts, there have been concerns raised about the "inadequate" efforts of the government for small businesses. Benefits, even if announced, have not reached many.

**Way forward:**

- Government should support the MSMEs until the situation comes back to normal.
- The government can help create demand by allowing big companies to work and lift all restrictions.

**8. National Productivity Council (NPC)**

- The NPC is an autonomous organisation under the Department for Promotion of Industry & Internal Trade (DPIIT), Ministry of Commerce & Industry, GoI.
- Established by the Ministry in 1958, it is an autonomous, multipartite, non-profit organization and has been registered as a Society under the Societies Registration Act XXI of 1860.
- NPC is a constituent of the Tokyo-based Asian Productivity Organisation (APO), an Inter-Governmental Body of which the Government of India is a founding member.
- The NPC's President is the Union Minister of Commerce and Industry. Its Chairman is the Secretary of the DPIIT.

**Objectives**

- The organization's primary objective is productivity promotion through consultancy, capacity building & training evidence-based research, monitoring and evaluation, etc.
- To promote innovation - led productivity in a sustained manner in all spheres of national economy through holistic and inclusive approach by addressing the triple bottom line – Economic, Environmental and Social.
- To propagate productivity consciousness and culture amongst Govt., Business and Society.

**Context:**

- Union Commerce and Industry Minister took an online review meeting of the National Productivity Council (NPC).

**9. Payments Infrastructure Development Fund (PIDF)****Context:**

- The RBI has created a Payments Infrastructure Development Fund (PIDF) to encourage acquirers to deploy Points of Sale (PoS) infrastructure — both physical and digital modes — in tier-3 to tier-6 centres and north eastern states.

**Classification**

Details of tier-wise classification of centres based on population

i) Classification of centres (tier-wise)	Population (as per 2011 Census)
Tier 1	-1,00,000 and above
Tier 2	-50,000 to 99,999
Tier 3	-20,000 to 49,999
Tier 4	-10,000 to 19,999
Tier 5	-5,000 to 9,999
Tier 6	- Less than 5000

## Population-group wise classification of centres

Rural Centre	-Population up to 9,999
Semi-urban centre	-from 10,000 to 99,999
Urban centre	-from 1,00,000 to 9,99,999
Metropolitan centre	-10,00,00 and above

**What was the need?**

- Over the years, payments ecosystem in the country has evolved with a wide range of options such as bank accounts, mobile phones, cards, etc.
- To provide further fillip to digitisation of payment systems, it is necessary to give impetus to acceptance infrastructure across the country, more so in underserved areas.

**Details**

- RBI will make an initial contribution of ₹250 crore to the PIDF, covering half of the fund, while the remaining contribution will be from card-issuing banks and card networks operating in the country.
- The PIDF will also receive recurring contributions to cover operational expenses from card-issuing banks and card networks. RBI will also contribute to yearly shortfalls, if necessary.
- The PIDF will be governed through an Advisory Council and managed and administered by RBI.

## 10. PM Formalization of Micro Food Processing Enterprises (PM FME)

**Context:**

- Ministry of Food Processing Industries (MoFPI), in partnership with the State/ UT Governments, has launched an all India Centrally Sponsored PM Formalisation of Micro food processing Enterprises Scheme (PM FME Scheme) for providing financial, technical and business support for upgradation of existing micro food processing enterprises.

**Background**

- There are about 25 lakh unregistered food processing enterprises which constitute 98% of the sector and are unorganized and informal. Nearly 66 % of these units are located in rural areas and about 80% of them are family-based enterprises.
- This sector faces a number of challenges including the inability to access credit, high cost of institutional credit, lack of access to modern technology, inability to integrate with the food supply chain and compliance with the health & safety standards.
- Strengthening this segment will lead to reduction in wastage, creation of off-farm job opportunities and aid in achieving the overarching Government objective of doubling farmers' income.

**Objectives:**

- Increase in access to finance by micro food processing units.
- Increase in revenues of target enterprises.

- Enhanced compliance with food quality and safety standards.
- Strengthening capacities of support systems.
- Transition from the unorganized sector to the formal sector.

**Funding**

- The expenditure under the scheme would be shared in 60:40 ratio between Central and State Governments, in 90:10 ratio with North Eastern and Himalayan States, 60:40 ratio with UTs with legislature and 100% by Centre for other UTs.

**One District One Product (ODOP) approach**

- The Scheme adopts One District One Product (ODOP) approach to reap benefit of scale in terms of procurement of inputs, availing common services and marketing of products.
- The States would identify food product for a district keeping in view the existing clusters and availability of raw material.
- The ODOP product could be a perishable produce based product or cereal based products or a food product widely produced in a district and their allied sectors.
- An illustrative list of such products includes mango, potato, litchi, tomato, tapioca, kinnow, bhujia, petha, papad, pickle, millet-based products, fisheries, poultry, meat as well as animal feed among others.
- Preference would be given to those producing ODOP products.

**Other Areas**

- However, units producing other products would also be supported. Support for common infrastructure and branding & marketing would be for ODOP products.
- The Scheme also place focus on waste to wealth products, minor forest products and Aspirational Districts

**Significance**

- The Scheme would generate a total investment of Rs 35,000 crore and generate 9 lakh skilled and semi-skilled employment and benefit 8 lakh units through access to information, training, better exposure and formalization.
- Existing Individual micro food processing units desirous of upgradation of their unit can avail credit-linked capital subsidy @35% of the eligible project cost with a maximum ceiling of Rs.10 lakh per unit.
- The Scheme places special focus on capacity building and research

### 11. Quality Council of India

- Quality Council of India (QCI) was set up jointly by the Government of India and the Indian Industry represented by the three premier industry associations i.e. Associated Chambers of Commerce and Industry of India (ASSOCHAM), Confederation of Indian Industry (CII) and Federation of Indian Chambers of Commerce and Industry (FICCI), to establish and operate national accreditation structure and promote quality through National Quality Campaign.
- QCI is registered as a non-profit society with its own Memorandum of Association. QCI is governed by a Council of 38 members with equal representations of government, industry and consumers.
- Chairman of QCI is appointed by the Prime Minister on the recommendation of the industry to the government.
- The Department of Industrial Policy & Promotion, Ministry of Commerce & Industry, is the nodal ministry for QCI.

#### Context

- Shri Piyush Goyal reviews the Quality Council of India

### 12. RBI slams banks, NBFCs as digital loan agents flout code

#### Context:

- The Reserve Bank of India (RBI) has come down heavily on banks and non-banks as it found violation of fair practices code by digital platforms that act as an agency of these lenders to sell loans.

#### Details:

- The RBI said it found the platforms tend to portray themselves as lenders without disclosing the name of the bank/ NBFC at the back end as a result of which customers were not able to access grievance redressal avenues available under the regulatory framework.
- "Of late, there are several complaints against the lending platforms which primarily relate to exorbitant interest rates, non-transparent methods to calculate interest, harsh recovery measures, unauthorised use of personal data and bad behaviour," RBI said.
- The RBI said it was concerned due to non-transparency of transactions and violation of guidelines on outsourcing of financial services and Fair Practices Code.

#### Measures taken:

- RBI has prescribed norms such as loan sanction letter to be issued to the borrower on the letter head of the lender concerned.
  - \* Immediately after sanction but before execution of the loan agreement, the sanction letter must be issued to the borrower on the letter head of the bank/ NBFC concerned.
- The lenders are told to disclose the names of all digital lending platforms, engaged as agents, on the websites of banks/ NBFCs.

- The RBI has instructed that a copy of the loan agreement along with a copy each of all enclosures quoted in the loan agreement be furnished to all borrowers at the time of sanction/ disbursement of loans.

### 13. Real Time Market (RTM) in Electricity

#### Context:

- Union Power Minister launches pan-India Real Time Market in electricity.

#### RTM

- It is an organized market platform to enable the buyers and sellers pan-India to meet their energy requirement closer to real time of operation.
- Introduction of Real Time Market will bring the required flexibility in the market to provide real time balance while ensuring optimal utilization of the available surplus capacity in the system.

#### How it works?

- The real time market would be for every 30 minutes in a day based on double sided closed auction with uniform price.
  - \* The concept of "Gate Closure" has been introduced for bringing in the desired firmness in schedules during the hours of market operation.
- Buyers/sellers shall have the option of placing buy/sell bids for each 15-minute time block.

#### Expected benefits

- The proposed real time market would provide an alternate mechanism for Discoms to access larger market at competitive price.
- On the other hand, generators would also benefit by participating in the real time market with their un-requisitioned capacity.
- The Real Time Market would help to mitigate challenges to the grid management due to intermittent and variable nature of renewable energy generation and therefore, help to integrate higher quantum of renewable energy resources into the grid.
- It will also help manage diversity in the demand pattern in the country with an organized market at national level.

### 14. Sahakar Mitra: Scheme on Internship Programme

- It is an initiative by National Cooperative Development Corporation (NCDC).
- Sahakar Mitra scheme will help cooperative institutions access new and innovative ideas of young professionals
- It will provide the young professionals with an opportunity for practical exposure and learning from the working of NCDC and cooperatives as a paid intern.

- Sahakar Mitra would also provide an opportunity to professionals from academic institutions to develop leadership and entrepreneurial roles through cooperatives as Farmers Producers Organizations (FPO).
- Under the scheme, professional graduates in disciplines such as Agriculture and allied areas, IT etc. will be eligible for an internship.
  - \* Professionals who are pursuing or have completed their MBA degrees in Agri-business, Cooperation, Finance, International Trade, Forestry, Rural Development, Project Management etc. will also be eligible.

#### Significance

- Sahakar Mitra scheme is expected to assist cooperative institutions access new and innovative ideas of young professionals while the interns gain experience of working in the field giving the confidence to be self-reliant.
- It is expected to be a win-win situation both for cooperatives as well as for the young professionals.

#### National Cooperative Development Corporation (NCDC)

- It was established by an Act of Parliament in 1963 as a statutory Corporation under the Ministry of Agriculture & Farmers Welfare.
- The objectives of NCDC are planning and promoting programmes for production, processing, marketing, storage, export and import of agricultural produce, foodstuffs, industrial goods, livestock and certain other notified commodities and services on cooperative principles
- Its headquarters is in New Delhi.

### **15. Skills Build Reignite**

#### Context:

- Ministry of Skill Development & Entrepreneurship (MSDE)–IBM Partnership Unveils Free Digital Learning Platform “Skills Build Reignite” to Reach More Job Seekers & Provide New Resources to Business Owners in India

#### Details

- The SkillsBuild Reignite tends to provide job seekers and entrepreneurs, with access to free online coursework and mentoring support designed to help them reinvent their careers and businesses.
- Job seekers, individual business owners, entrepreneurs and any individual with learning aspirations can now tap into host of industry relevant content on topics including Artificial intelligence, Cloud, Data analytics and security to reskill and upskill themselves, at no cost.
- Its special feature is the personalized coaching for entrepreneurs, seeking advice to help establish or restart their small businesses as they begin to focus on recovery to emerge out of the COVID 19 pandemic.

- \* Courses for small business owners include, for example, financial management, business strategy, digital strategy, legal support and more.

- Plus, IBM volunteers will serve as mentors to some of the 30,000 SkillsBuild users in 100 communities in at least five major regions worldwide to help reinvigorate local communities.

#### Significance

- The SkillsBuild Reignite platform helps equip job seekers with digital, professional skills and relevant training to re-enter the workforce.
- It will help us address the widening skill gap in the country and create a culture of up-skilling.

#### SkillsBuild Innovation camp

- It is a 10 week program which supports 100 hours of structured learning to learners who are interested in gaining hands-on project experience to enhance learning and are intent on building their network and enhance their employability.
- With the guidance of expert facilitators, IBM volunteers and coaches, the students will be guided through the design thinking process and learn strategic methods to craft their problem statement, ideate creatively, solve complex problems more quickly, design an innovative user experience and tell compelling stories.
- The SkillsBuild Innovation Camp concludes with a pitch to facilitators, other teams, stakeholders and potential employers or investors.

### **16. SWADES (Skilled Workers Arrival Database for Employment Support)**

#### Context:

- The Government of India has launched SWADES to conduct a skill mapping exercise of the returning citizens under the Vande Bharat Mission.

#### Details

- This is a joint initiative of the Ministry of Skill Development & Entrepreneurship (MSDE), the Ministry of Civil Aviation and the Ministry of External Affairs.
- It aims to create a database of qualified citizens based on their skillsets and experience to tap into and fulfil demand of Indian and foreign companies.
- The collected information will be shared with the companies for suitable placement opportunities in the country.
- The returning citizens are required to fill up an online SWADES Skills Card.
  - \* The card will facilitate a strategic framework to provide the returning citizens with suitable employment opportunities through discussions with key stakeholders including State Governments, Industry Associations and Employers.



- MSDE's implementation arm, the National Skill Development Corporation (NSDC) is supporting the implementation of the project.

#### Key Facts

- As per the skill mapping, citizens had been primarily employed in sectors such as oil & gas, construction, tourism & hospitality, Automotive and Aviation.
- The data also suggests that the States which have shown highest returning labour are Kerala, Tamil Nadu, Maharashtra, Karnataka and Telangana.

### **17. The Farmers' Produce Trade and Commerce (Promotion & Facilitation) Ordinance 2020**

- It will provide for the creation of an ecosystem where the farmers and traders enjoy the freedom of choice relating to sale and purchase of farmers' produce which facilitates remunerative prices through competitive alternative trading channels.
- It will promote efficient, transparent and barrier-free inter-State and intra-State trade and commerce of farmers' produce outside the physical premises of markets or deemed markets notified under various State agricultural produce market legislations.
- Besides, the Ordinance will provide a facilitative framework for electronic trading and matters connected therewith or incidental thereto.

#### Significance

- These measures will enable barrier-free trade in agriculture produce, and also empower the farmers to engage with sponsors of his choice.
- It will impart efficiency and effectiveness to agricultural marketing, with the aim of raising the income of the farmers.

### **The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Ordinance 2020**

- It provides a framework for the protection and empowerment of farmers with reference to the sale and purchase of farm products. The provisions of the Ordinance will override all state APMC laws.
- The Ordinance provides for a farming agreement prior to the production or rearing of any farm produce, aimed at facilitating farmers in selling farm produces to sponsors.
- It will provide for a national framework on farming agreements that protects and empowers farmers to engage with agri- business firms, processors, wholesalers, exporters or large retailers for farm services and sale of future farming produce at a mutually agreed remunerative price framework in a fair and transparent manner and for matters connected therewith or incidental thereto.

#### Significance

- It will transfer the risk of market unpredictability from the farmer to the sponsor and also enable the farmer to access modern technology and better inputs.
- It will reduce cost of marketing and improve income of farmers.
- It is expected to attract private sector investment for building supply chains for supply of Indian farm produce to global markets.

#### Context:

- President promulgates two Ordinances with the aim of giving a boost to rural India and agriculture

### **18. Turant Customs**

#### Context:

- Central Board of Indirect Taxes and Customs, launched its flagship programme Turant Customs, at Bengaluru and Chennai.

#### Details

- They will leverage technology for faster Customs clearance of imported goods.
- Importers will now get their goods cleared from Customs after a faceless assessment is done remotely by the Customs officers located outside the port of import.

#### Significance

- Turant Customs is a mega reform for the ease of doing business.
- Turant Customs will benefit the importers by eliminating routine interface with the Customs officers and providing uniformity in assessment across the country.
- The electronic transmission of the Shipping Bill would do away with the present requirement to take paper printout of these documents thereby promoting Green Customs.
- Equally importantly exporters would not have to visit the Customs Houses for this purpose and can better utilize their time in promoting their business.

#### **ICEDASH**

- It is an Ease of Doing Business monitoring dashboard of the Indian Customs helping the public see the daily Customs clearance times of import cargo at various ports and airports.

#### **ATITHI app**

- It will facilitate hassle-free and faster clearance by Customs at the airports and enhance the experience of international tourists and other visitors at the airports.
- ATITHI will create a tech-savvy image of India Customs and would encourage tourism and business travel to India.

These initiatives reduce interface and increase the transparency of Customs functioning.



## 19. Universal Basic Income

### Context:

- The economic crisis brought by the COVID-19 pandemic.

### Challenges for India:

#### **COVID crisis:**

- The lockdown in place to contain the spread of the COVID-19 pandemic has resulted in economic misery to a large section of the population. The migrant labourers have been adversely affected by the lockdown measures.
- With almost 90% of India's workforce in the informal sector without minimum wages or social security, the economic circumstances will be worse in India than compared to developed countries.
- Lockdowns in some format are expected to be the norm till the arrival of a vaccine.

#### **Slowing world growth:**

- IMF has projected global growth in 2020 to be -3.0%, the worst since the Great Depression.
- India is projected to grow at 1.9%.
- The slowing growth would entail lesser economic activities and lesser employment opportunities in India.

#### **Employment woes in India:**

- Even before the pandemic, India was struggling to find enough opportunities for more than a million job aspirants who were entering the job market each month.

#### **Fourth industrial revolution:**

- The fourth industrial revolution has brought forth novel challenges.
- Though disruptive technologies like artificial intelligence are ushering in productivity gains like never before, they are also steadily reducing human capital requirements, making jobs a premium.
  - \* The Silicon Valley, home to five of the world's eight most valuable companies, points to the emerging trend. The giant technology companies have a cumulative market cap of over \$4 trillion, yet they together directly employ just 1.2 million people.

### Universal Basic Income (UBI)

UBI programme will help find solutions to some of the critical challenges facing the Indian economy.

- UBI involves the provision of an unconditional fixed amount to every citizen in a country.
- Countries across the world, including Kenya, Brazil, Finland, and Switzerland, have begun controlled UBI pilots to supplement their population.

### Why we need UBI when economic packages are released?

- Bailouts, schemes, and loans are failing to reach all those in need.
- Packages are based on conditions only when they are met, monetary benefits could be realized.

### Significance of UBI:

#### **Alternative to employment generation:**

- The Universal Basic Income (UBI) programme could be a potential solution that could mitigate the looming crisis caused by dwindling job opportunities.

#### **Tool to eradicate poverty:**

- UBI is also deliberated as an effective poverty-eradication tool.
  - \* The 2016-17 Economic Survey and the International Monetary Fund (IMF) had once proposed quasi-basic income schemes that leave out the well-off top quartile of the population as an effective means of alleviating poverty and hunger.
  - \* The fiscal cost of a UBI pegged at Rs. 7,620, at 75% universality, was 4.9% of the GDP. A UBI on par with the numbers suggested by the Economic Survey could lead to targeted household incomes increasing by almost Rs. 40,000 per annum given the fact that the average Indian household size is approximately five.

### Challenges to implementation of UBI:

- The political will for UBI has been lukewarm because of the fiscal costs involved.
- Requirements to trim some of the existing subsidies to balance the resultant deficit are also politically difficult questions which have not received attention.

### Way forward:

- The introduction of unconditional regular pay checks at maximum universality, at least till the economy normalizes is the need of the hour.

## 20. Time to discontinue free power for farmers

### Context:

- The Centre is pushing for a key reform in the agricultural sector by replacing the free power supply scheme for farmers with an idea of Direct Benefit of Transfer (DBT).

### Issues with free power supply to the farmers

- First, the scheme of free power supply has led to widespread wastage of water and electricity. It is inherently against incentivising even a careful farmer to conserve the two precious resources.
- Second, India is the largest user of groundwater at 251 billion cubic meters, exceeding the combined withdrawal by China and the U.S.
  - \* Be it parts of the Cauvery delta in Tamil Nadu or the Sangrur district of Punjab, the story about the groundwater table is the same — a worrying rate of depletion.

- \* To sustain their activity, farmers need to go for submersible or high-capacity pumpsets.
- Third, the extension of the scheme to different States over the years has only encouraged installation of more pumpsets.
  - \* Karnataka is a classic example, the number of irrigation pumpsets, which was around 17 lakh 12 years ago (2018), is around 30 lakhs in 2020.
  - \* This has led to widespread groundwater exploitation.
  - \* Under the traditional system, several farmers are misusing the water by over-irrigating the crops due to free power available to them.
- Fourth, there is misuse of the scheme for which not just a section of farmers, but also field officials have to be blamed.
  - \* Resource-rich farmers enjoy greater power subsidy benefits than the poor farmers due to political connections.
- Fifth, in the absence of meters for connections or segregation of feeders or metering of distribution transformers, accurate measurement of consumption becomes tricky.
  - \* Those in charge of power distribution companies find it convenient to reduce their aggregate technical and commercial losses by clubbing a portion of the losses with energy consumption by the farm sector.

#### **Environmental Damage**

- The policy has also increased carbon emissions from the increased use of electricity.

#### **Argument for free power**

Proponents of the free power scheme have a couple of valid points in their support.

- Apart from ensuring food security, free power provides livelihood opportunities to landless workers.

#### **How DBT works?**

- Under DBT, farmers will have to pay the bill for the power consumed for agriculture purposes. After that, they will get the subsidy in their bank accounts through DBT.
- It is opposed to the current mechanism, where the subsidy is provided en masse by the State government to the distribution company (Discom).
- DBT implementation could potentially help target subsidies, incentivise behaviour change and reduce wastage of scarce public funds.

#### **Concerns with the Centre's move to allow for a transfer of subsidies through DBT**

- Farmers will have to pay first from their own pocket, after which they will get subsidies.
- Are the country's farmers in a position to pay Rs 4,000-5,000 in advance and wait for the transfer from their government?

#### **Challenges**

- First, farmers are reluctant to relinquish access to subsidized power, even when utilities promise supply quality improvements.
- Second, political decision makers face difficulties implementing a rational price regime for agricultural power supply because it is hugely unpopular.

#### **Way forward**

- Before universal DBT for electricity is applied, close attention needs to be paid to on-going pilots and more large-scale pilots are necessary.
- Lessons from multiple pilots for a varied mix of consumers can inform steps needed to ensure smooth implementation.
- Electricity Regulatory Commissions, Discoms and State Governments should allow different kinds of pilots with strong monitoring, evaluation and learning mechanisms, before signing on to universal adoption.
- Further, there is a need for third-party audits authorised by regulatory commissions to check if consumers are aware of subsidies provided, if they are in receipt of promised subsidies and to verify if the impacts due to delays are borne by the government.

### **21. Who's afraid of monetisation of the deficit?**

#### **Context:**

- The article analyzes the arguments both in favor of and against the monetisation of the deficit likely to occur due to the economic distress caused by the pandemic.

#### **Background:**

#### **Rating and fundamentals:**

- The rating agency Moody's has downgraded India from Baa2 to Baa3. Moody's has also retained its negative outlook on India, which suggests that a further downgrade is more likely than an upgrade.
- Notably, the downgrade has not factored in the economic impact of the pandemic. It has to do with India's fundamentals before the onset of the pandemic and the extended lockdown with which India responded.
- Any further deterioration in the fundamental economic parameters will push India into 'junk' status.

#### **COVID crisis:**

- The government has been taking several measures to counter the severe economic downturn caused by the novel coronavirus pandemic.
- The government's focus thus far has been on reassuring the financial markets that the fiscal deficit will be kept under control. It has kept the 'discretionary fiscal stimulus' to 1% of GDP.
  - \* 'Discretionary fiscal stimulus' refers to an increase in the fiscal deficit caused by government policy as distinct from an increase caused by slowing growth, the latter being called an 'automatic stabiliser'.

**Arguments against monetizing the deficit:**

- A section of economists have expressed concerns against the move to monetize the deficit.

**Further downgrading and associated concerns:**

- The move could lead to a downgrading of India's status by the rating agencies.
- Despite the failings of the rating agencies, their ratings do carry weight. Institutional investors are largely bound by covenants that require them to exit an economy that falls below investment grade.
- If India is downgraded to junk status, foreign institutional investors, or FIIs, will withdraw from the Indian economy. This would adversely affect foreign investment in India. The stock and bond markets will take a severe beating.
- The rupee will depreciate hugely and the central bank will have to take counter measures to avoid a foreign exchange crisis. This could burden the RBI which is deliberating on easing the economic pressures caused by the pandemic.

**Fears of inflation:**

- When the government spends the extra funds, there is an increase in 'Base money', that is, currency plus banks' reserves. Hence, monetisation results in an expansion of money supply.
- There are fears that this expansion in money supply could be inflationary.

**Arguments in favor of monetizing the deficit:**

- Several economic experts have urged the government to go for a fiscal stimulus without worrying about the increase in public debt and exercise the option of monetizing the deficit, that is, the central bank providing funds to the government.

**Correct analysis of the downgrade:**

- Recognizing the key concerns that Moody's has cited in effecting the present downgrade to India's rating: slowing growth, rising debt and financial sector weakness, there is the need to address these specific issues.
  - \* Many economists expect India's economy to shrink in FY 2020-21.
  - \* The combined fiscal deficit of the Centre and the States is expected to be in the region of 12% of GDP. Moody's expects India's public debt to GDP ratio to rise from 72% of GDP to 84% of GDP in 2020-21.
  - \* The banking sector had non-performing assets of over 9% of advances before the onset of the pandemic. Weak growth and rising bankruptcies will increase stress in the banking sector.
- Keeping the fiscal deficit under control helps address only the concerns about a rise in the public debt to GDP ratio. It does not address the concerns about growth. The debt to GDP ratio will worsen and financial stress will accentuate if growth fails to recover quickly enough.

- Only a fiscal stimulus via deficit monetization can ensure the revival of growth and financial sector health.
- Therefore the rating agencies would recognize the unusual times and would rate accordingly. Even if the rating agencies chose to downgrade, India should not be concerned under the current circumstances.

**False fears of inflation:**

- Given the fact that the aggregate demand has fallen sharply and there is an increase in unemployment, monetisation of the deficit is more likely to raise actual output closer to potential output without any great increase in inflation.

**Ideological preferences:**

- Economists have repeatedly pointed out that there is nothing particularly virtuous about the government incurring expenditure and issuing bonds to banks instead of issuing these to the central bank. The expansion in base money and hence in money supply is the same in either route.
- Central banks worldwide have resorted to massive purchases of government bonds in the secondary market in recent years. These are carried out under Open Market Operations (OMO). The impact on money supply is the same whether the central bank acquires government bonds in the secondary market or directly from the Treasury.
  - \* OMO is a 'temporary' expansion in the central bank's balance sheet whereas Monetization is 'permanent'.
- The preference for private debt (as envisaged in the government's plan for economic revival) is voluntary and hence there is less certainty in it yielding results. The author argues that the government's move has more to do with an ideological preference for limiting government expenditure than economic sense.

**Way forward:****Increase spending:**

- India needs to increase the discretionary fiscal stimulus. More government spending is required, especially for infrastructure.

**Monetizing the deficit:**

- India needs to increase the discretionary fiscal stimulus without increasing public debt.
- The government must confine itself to the additional borrowing of Rs.4.2 trillion which it has announced. Further discretionary fiscal stimulus must happen through monetisation of the deficit. That way, the debt to GDP ratio can be kept under control while also addressing concerns about growth.

## 22. Getting out of the 'guns, germs and steel' crisis

### Introduction

India faces a "guns, germs and steel" crisis, to borrow from the title of Jared Diamond's classic book on the evolution of societies and nations, *Guns, Germs, and Steel: The Fates of Human Societies*.

- There are Chinese "guns" on the borders.
- There are coronavirus "germs" in our bodies.
- There are "steel" makers and other businesses on the verge of bankruptcy.
- Each of these would qualify as an independent, large crisis by itself, warranting a specific resolution.

### Details

#### 1) Dealing with China:

- Standing up to a military threat by a superpower neighbor will pose an inevitable drain on the finances of the government.
- India's war against Pakistan in Kargil in May 1999 provides hints of the financial burden of a military threat.
  - \* India's defence expenditure in the war year shot up by nearly 20% from the previous year.
  - \* It also forced the then government to increase India's defence budget for the next financial year to 2.7% of nominal GDP, the highest in decades.
- China is a far mightier power than Pakistan.
- In the current stand-off, India is bound to assert its rights, which will necessitate higher expenditure.
  - \* India's defence budget has been whittled down to just 2% of GDP for the financial year 2021.
  - \* China's defence budget is nearly four times larger.
- In all likelihood, the Chinese conflict will stretch central government finances by an additional one to two percentage points of GDP, as India wards off the current threat and shores up its defence preparedness.

#### 2) Health care:

- The health pandemic has exposed India's woefully inadequate health infrastructure.
- The combined public health expenditure of States and the central government in India is a mere 1.5% of GDP, compared to China's at 3% and America's at 9%.
- With COVID-19 expected to linger on until a suitable vaccine is available at large, there is no option other than to significantly ramp up India's health expenditure.
- Many public health experts are of the opinion that the central government will need additional funds of the equivalent of at least one percentage point of GDP to continue the fight against COVID-19.

### 3) Economy:

- The national lockdown has thrown India's economy into utter disarray.
- India's economy has four major drivers:
  - \* People's spending on consumption
  - \* Government spending
  - \* Investment
  - \* External trade
- Spending by people is the largest contributor to India's economic growth every year. For every ₹100 in incremental GDP, ₹60 to ₹70 comes from people's consumption spending. The lockdown shut off people from spending for two full months, which will contract India's economy for the first time in nearly five decades, regardless of a strong agriculture performance.
- Even prior to COVID-19 when the global economy was robust, India's trade levels had fallen from 55% of nominal GDP in 2014 to 40% in 2020. Now, with the global economy in tatters, trade is not a viable alternative to offset the loss from consumption.
- Investment is also not a viable option at this stage since the demand for goods and services has fallen dramatically.

### Way Forward:

#### Incremental Funds Needed:

- The only options are:
  1. To put money in the hands of the needy to stimulate immediate consumption.
  2. For the government to embark on a massive spending spree (similar to the "New Deal" – which was a series of programmes and projects instituted by U.S. President Franklin D. Roosevelt during the Great Depression of the 1930s.)
- The crisis will impose a total financial burden of an additional eight percentage points of GDP on the central government exchequer.

#### Where will the government get such a large sum of money from?

- The government needs to spend an additional eight percentage points of GDP while revenues will be lower by two percentage points of GDP, a combined gap of 10% of GDP.
  - \* The government had expected a nominal GDP growth of 10% this year (2020). It is clear now that GDP will not grow but shrink.
  - \* A 'V' shaped economic recovery (characterized by a quick and sustained recovery in measures of economic performance after a sharp economic decline), is a mere illusion.
  - \* Revenues will likely fall short by two percentage points of GDP.



- Potential new sources of revenue such as a wealth tax or a large capital gains tax are ideas worth exploring for the medium term but will not be of much immediate help.
- The only option for the government to finance its needs is to borrow copiously, which will obviously push up debt to ominous levels.
- When government debt rises dramatically, there will be a fourth dimension to the “guns, germs and steel crisis”; a “junk” crisis.

#### **The ‘junk rating’ risk:**

- With rising debt levels, international ratings agencies will likely downgrade India’s investment rating to “junk”, which will then trigger panic among foreign investors.
- India thus faces a tough “Dasharatha” dilemma — save the country’s borders, citizens and economy or prevent a “junk” rating.

#### **Printing money at will:**

- Some economists argue that there is a magical third choice – to print how much ever money the government needs to overcome these issues.
  - \* Economic theory states that if money is printed at will, it can lead to a massive spike in prices and inflation.
  - \* This theory has fallen flat in the past decade in developed nations such as America where the creation of phantom money has not led to inflation.
  - \* Hence, the Reserve Bank of India can just create money at will and transfer them to government coffers electronically, is the argument.
- There are multiple problems with this argument but the most important one is that regardless of whether money is printed or borrowed from others, it will still be counted as government debt and not escape a potential downgrade to a “junk” rating.
- The U.S dollar, by virtue of being the world’s reserve currency, has an in-built protection against a currency crisis that can be triggered by at-will printing of money, that other developing nations such as India do not possess.

#### **Conclusion:**

- The nation is at the face of an extremely challenging moment in her history. How India emerges from this crisis will shape not just India’s destiny but the world’s.
- The government’s choices are either to be bold and embark on a rescue mission or do nothing and hope the situation resolves itself.
- The Chinese military threat calls for immediate and strategic action by our defence and foreign affairs establishments.
- The COVID-19 health epidemic needs constant monitoring by the Health Ministry and local administration.

- The economic collapse is an enormous challenge that needs to be overcome with prudent policy.
- The common thread across these is that its resolution requires significant financial resources.
- On balance, it seems that the best course of action is to borrow unabashedly to pull India out of the “guns, germs and steel” crisis and deal with the consequences of a potential “junk” nation label.

### **23. Towards a Clean Energy Economy: Post-Covid-19 Opportunities for India’s Energy and Mobility Sectors Report**

#### **Context:**

NITI Aayog and Rocky Mountain Institute (RMI) released “Towards a Clean Energy Economy: Post-COVID-19 Opportunities for India’s Energy and Mobility Sectors” report.

#### **Details:**

- The report advocates for stimulus and recovery efforts that work towards building a clean, resilient, and least-cost energy future for India. These efforts include electric vehicle, energy storage, and renewable energy programs.
- The report identifies how Covid-19 is beginning to influence the clean energy transition in India, specifically for the transport and power sectors, and recommends principles and strategic opportunities for the country’s leaders to drive economic recovery and maintain momentum towards a clean energy economy.
- Covid-19 has presented significant demand- and supply-side challenges for India’s transport and power sectors, from liquidity constraints and supply shortages to shifts in consumer demand and preferences.
- The CEO of the NITI Aayog said that clean energy will be a major driver of India’s economic recovery and international competitiveness.
- The report lays out four principles as a framework for policymakers and other key decision-makers considering programmes to support India’s clean energy future:
  - \* Invest in least-cost energy solutions
  - \* Support resilient and secure energy systems
  - \* Prioritise efficiency and competitiveness
  - \* Promote social and environmental equity
- Opportunities in the transport sector include making public transport safe, enhancing and expanding non-motorized transport infrastructure, reducing vehicle kilometres travelled through work-from-home where possible, supporting national strategies to adopt electric vehicles in the freight and passenger segments, and making India an automotive export hub.



- In the power sector, opportunities include improving the electricity distribution business and its operations, enabling renewables and distributed energy resources, and promoting energy resilience and local manufacturing of renewable energy and energy storage technologies.
- The report states that India's transport sector can save 1.7 gigatons of cumulative carbon dioxide emissions and avoid about 600 million tonnes of oil equivalent in fuel demand by 2030 through shared, electric, and connected passenger mobility and cost-effective, clean, and optimized freight transport.
- Significant savings are also achievable in the power sector through the adoption of renewable energy, energy storage, efficiency, and flexible generation and demand.

## 24. Shapes of economic recovery

### U-shaped recovery

- A U-shaped recovery — resembling a bathtub — is a scenario in which the economy, after falling, struggles and muddles around a low growth rate for some time, before rising gradually to usual levels.

### W-shaped recovery

- A W-shaped recovery is a dangerous creature — growth falls and rises, but falls again before recovering yet again, thus forming a W-like chart.
- The double-dip depicted by a W-shaped recovery is what some economists are predicting if a second wave of Covid comes along and the initial rebound flatters to deceive.

### Nike swoosh

- The “Nike swoosh” recovery, named after the iconic check-mark logo, brings a dramatic surge once lockdowns end, and a boost that's blunted quickly.
- In this scenario, Brookings notes, it “takes a long while for the economy to get back to pre-pandemic trajectory.”

### Z-shaped recovery

- The Z-shaped recovery is the most-optimistic scenario in which the economy quickly rises like a phoenix after a crash.
- It more than makes up for lost ground (think revenge-buying after the lockdowns are lifted) before settling back to the normal trend-line, thus forming a Z-shaped chart.

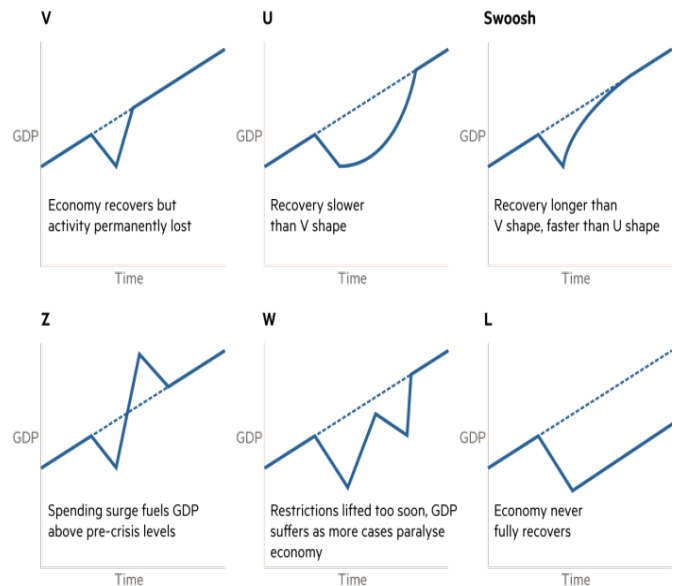
### V-shaped recovery

- The next-best scenario is a V-shaped recovery in which the economy quickly recoups lost ground and gets back to the normal growth trend-line.

### L-shaped recovery

- The L-shaped recovery is the worst-case scenario, in which growth after falling, stagnates at low levels and does not recover for a long, long time.

Shape of recovery



Source: Brookings Institution  
© FT

### Why is it important?

- The Indian economy was slowing down even before Covid hit, and the trouble has now been amplified manifold because of the lockdowns. Experts predict a fall of up to 5 per cent in the GDP in FY-21. This is clearly a crisis situation, and our getting out of the hole will depend a great deal on the shape of the economic recovery that will hopefully follow.
- A Z- or at least V-shaped recovery would be the most preferable.
- If not, we should at least have a U-shaped recovery or a Swoosh to get back on our feet in a couple of years.
- A W-shape will bring in much pain before the eventual gain, while an L-shape or the Inverted-square root will make a wreck of the growth train

## 25. Indian Gas Exchange (IGX)

### Context

- India's first gas exchange — the Indian Gas Exchange (IGX) — was launched recently.
- The exchange is expected to facilitate transparent price discovery in natural gas, and facilitate the growth of the share of natural gas in India's energy basket.

**How will this exchange work?**

- The IGX is a digital trading platform that will allow buyers and sellers of natural gas to trade both in the spot market and in the forward market for imported natural gas across three hubs —Dahej and Hazira in Gujarat, and Kakinada in Andhra Pradesh.
- Imported Liquefied Natural Gas (LNG) will be regassified and sold to buyers through the exchange, removing the requirement for buyers and sellers to find each other.
- The exchange also allows much shorter contracts – for delivery on the next day, and up to a month – while ordinarily contracts for natural gas supply are as long as six months to a year.

**Will domestically produced natural gas also be bought and sold on the exchange?**

- No. The price of domestically produced natural gas is decided by the government. It will not be sold on the gas exchange.
- However, following appeals by domestic producers that the prices set by the government are not viable given the cost of exploration and production in India, Petroleum Minister Dharmendra Pradhan has indicated that a new gas policy will include reforms in domestic gas pricing, and will move towards more market-oriented pricing.

**Will this make India more import dependent?**

- Domestic production of gas has been falling over the past two fiscals as current sources of natural gas have become less productive. Domestically produced natural gas currently accounts for less than half the country's natural gas consumption; imported LNG accounts for the other half.
- LNG imports are set to become a larger proportion of domestic gas consumption as India moves to increase the proportion of natural gas in the energy basket from 6.2% in 2018 to 15% by 2030.

**Regulations**

- Currently, the pipeline infrastructure necessary for the transportation of natural gas is controlled by the companies that own the network.
- State-owned GAIL owns and operates India's largest gas pipeline network, spanning over 12,000 km.

**26. SATYABHAMA (Science and Technology Yojana for Aatmanirbhar Bharat in Mining Advancement)****Context**

- The mines ministry announced the launch of a portal "SATYABHAMA" with an aim to promote research and development in the mining and minerals sector.

**Details**

- This portal will allow online submission of project proposals along with monitoring of the same and utilisation of funds.

- The portal is integrated with NGO Darpan Portal of NITI Aayog.
- The portal will increase efficiency and effectiveness in the implementation of the scheme.
- The portal has been designed, developed and implemented by National Informatics Centre (NIC), Mines Informatics Division.

**27. 'Can allow non-profit organisations to list on social stock exchanges'****Context:**

- A working group constituted by the Securities and Exchange Board of India (SEBI) on social stock exchanges has recommended allowing non-profit organisations to directly list on such platforms while allowing certain tax incentives to encourage participation on the platform.

**Details:**

- According to a release issued by the capital markets regulator, the group has recommended allowing non-profit organisations to directly list through issuance of bonds while recommending a range of funding avenues, including some of the existing mechanisms such as Social Venture Funds (SVFs) under Alternative Investment Funds (AIFs).
- The idea of a social stock exchange (SSE) for listing of social enterprise and voluntary organisations was mooted by the Finance Minister while presenting the Union Budget 2019-20.
  - \* It was announced for social enterprises and voluntary organisations working for social welfare to help them raise capital through debt, equity and mutual funds.

**Suggestions by the Working Group:**

- The group has also suggested a new minimum reporting standard for organisations that raise funds on social stock exchanges.
- It also suggested that for-profit social enterprises be allowed to list on the platform but with enhanced reporting requirements.
- The working group has also suggested that the social stock exchange (SSE) can be housed within the existing national bourses like the BSE and the National Stock Exchange.
  - \* This will help the SSE leverage existing infrastructure and client relationships of the exchanges to onboard investors, donors, and social enterprises [for-profit and non-profit], the report said.

**Social Stock Exchange:**

- Social Stock Exchange is a platform which allows investors to buy shares in social enterprises vetted by

an official exchange.

- Social Stock Exchange would provide a platform where investors would invest in social enterprises authorised by the exchange. Such enterprises would have to share with the public the details of their activities and investments in a transparent manner.

## 28. Gross Value Added numbers and the economy

### Context:

- Provisional estimates of national income for the financial year 2019-20 released by the National Statistical Office (NSO).

### Background:

Changes in national accounting methodology:

- In 2015, India opted to make major changes to its compilation of national accounts and bring the whole process into conformity with the United Nations System of National Accounts (SNA) of 2008.
- In the new series, in which the base year was shifted to 2011-12 from the earlier 2004-05, GVA at basic prices became the primary measure of output across the economy's various sectors and when added to net taxes on products amounts to the GDP.
- While India had been measuring GVA earlier, it had done so using 'factor cost' and GDP at 'factor cost' was the main parameter for measuring the country's overall economic output till the new methodology was adopted.

Gross Value Added (GVA):

- As per the United Nations System of National Accounts (SNA), gross value added, is defined as the value of output minus the value of intermediate consumption and is a measure of the contribution to GDP made by an individual producer, industry or sector.
- As part of the data on GVA, the NSO provides both quarterly and annual estimates of output — measured by the gross value added — by economic activity.
- The sectoral classification provides data on eight broad categories of goods produced and services provided in the economy.
  - \* Agriculture, Forestry and Fishing
  - \* Mining and Quarrying
  - \* Manufacturing
  - \* Electricity, Gas, Water Supply and other Utility Services
  - \* Construction
  - \* Trade, Hotels, Transport, Communication and Services related to Broadcasting
  - \* 1. Trade, Hotels, Transport, Communications and Services related to Broadcasting as a sector contributes almost 20% to GVA and is the largest GVA component after the other major services category, Financial, Real Estate and Professional

Services.

- \* Financial, Real Estate and Professional Services
- \* Public Administration, Defence and other Services.

### Details:

- The real GDP (Gross Domestic Product) has been estimated to have expanded by 4.2% from a year earlier, the slowest pace of growth in 11 years. And GDP growth for the January-March quarter was pegged at 3.1%.
- The release also detailed the estimates of the Gross Value Added, or GVA, at basic prices for the four quarters of 2019.

### Concerns:

- The GVA numbers for the first three quarters revealed significant downward revisions from the NSO's initial estimates.
- While initial estimates are routinely revised based on the updated availability of information, the extent of these revisions has come into focus since they point to a sharper and more widespread slowdown in economic activity over the course of the last financial year than had been previously revealed.

### Significance of GVA:

- The GVA data is relevant even though the headline growth always refers to GDP.

Supply conditions:

- GDP is often computed as the sum total of the various expenditures incurred in the economy including private consumption spending, government consumption spending and gross fixed capital formation or investment spending, and hence reflects essentially on the demand conditions in the economy.
- The GVA data is crucial to understand how the various sectors of the real economy are performing. From a policymaker's perspective, it is vital to have the GVA data to be able to make policy interventions on the supply side wherever necessary.

Global data standard:

- From a global data standards and uniformity perspective, GVA is an integral and necessary parameter in measuring a nation's economic performance, and any country which seeks to attract capital and investment from overseas does need to conform to the global best practices in national income accounting.

### Drawbacks in using GVA:

- As with all economic statistics, the accuracy of GVA as a measure of overall national output is heavily dependent on the sourcing of data and the accuracy of the various data sources.

- GVA is susceptible to vulnerabilities from the use of inappropriate or flawed methodologies.
- In a June 2019 research paper titled 'India's GDP Mis-estimation: Likelihood, Magnitudes, Mechanisms, and Implications,' former Chief Economic Adviser Arvind Subramanian had claimed that the change in methodology and data sources when India switched its base year to 2011-12 had led to a significant overestimation of growth.
- It was also argued that the value based approach instead of the earlier volume based approach in GVA estimation had affected the measurement of the formal manufacturing sector and thus distorted the outcome.

## **29. USTR launches investigation into digital services taxes**

### **Context:**

- The Trump administration has launched investigations into digital services taxes levied or under consideration by 10 countries, including India, to determine whether they discriminate against American tech companies

### **Details**

- The investigations announced by the US Trade Representative (USTR) will cover digital taxes either adopted or under consideration in the European Union and 10 countries, including Austria, Brazil, India, Indonesia, Italy and the UK.
- The USTR's probe, called a "section 301 investigation" because it is conducted under Section 301 of the 1974 Trade Act, will determine whether taxes on electronic commerce by the EU and the 10 countries discriminate against US tech giants such as Apple, Google and Amazon.
- This provision gives the USTR broad authority to investigate and respond to a foreign country's action which may be unfair or discriminatory and negatively affect US commerce
- Such investigations by the USTR can take months before the US administration decides whether to retaliate against taxes through tariffs or other measures.

### **India**

- To expand its tax base and address the challenges from rapid digitalization of the economy, India introduced an equalization levy through Finance Act 2016 on certain non-resident businesses like mobile phone apps, social media platforms, digital content streaming services with a customer base in India. The levy was applied at a rate of 6% on online advertisements on such platforms.
  - \* Notably, equalisation levy is a special levy, charged by the Indian government on digital transactions, outside the purview of Indian income tax law.

- \* Thus, this is a unilateral levy, where non-resident companies may not be able to claim any tax treaty benefits.
- However, vide the Finance Act 2020, a new provision providing for equalisation levy on revenues generated by e-commerce operators was introduced.
  - \* The new provision significantly widens the scope of equalisation levy, which provides that consideration received/ receivable by a non-resident e-commerce operator, from the online sale of goods or online provision of services or a combination of both, shall be subject to 2 per cent equalisation levy with effect from April 1, 2020.
  - \* New equalisation levy shall be charged on the revenue earned from either selling goods or services to Indian resident customers or other customers using Indian IP addresses or sale of data collected from Indian residents/ Indian IP address or from the sale of advertisement targeting Indian customers.
- It may be important to note that new equalisation levy provisions are applicable only if aggregate revenues for a non-resident e-commerce operator exceed a threshold of Rs 2 crores.

### **Impact on Companies**

- The provisions defining scope, are so widely worded that it may affect all kind of
  - \* e-commerce operators/ service providers/ aggregators generating revenues from India, such as online sellers of goods like Amazon, Alibaba.com, e-Bay, etc;
  - \* online streaming/ content service providers such as Netflix, Amazon Prime, Audible, etc;
  - \* Online travel aggregators such as Trivago, TripAdvisor, Agoda, Bookings.com, etc.
- Additionally, it may also impact other non-resident service providers/ tech companies selling software/ technological solutions or services online through a digital platform owned/ operated/ managed by them to any customer in India.
- Further, unlike earlier equalisation levy in respect of online advertisement services applicable only on B2B transactions, these new equalisation levy provisions are applicable on every transaction undertaken by such non-resident e-commerce companies even with individual customers.
- The new levy also seeks to expand its realm by bringing any person using Indian IP address under its net, irrespective of the customer is an Indian resident or not.

The 2% digital services tax which came into effect on 1 April is what the USTR is seeking to investigate.

### **Implications on India USA economic ties**

- In India's case, it could potentially affect the outcome of a bilateral trade deal that the NDA government has been looking to forge with the US.
- In the backdrop of an increasingly crippled World Trade Organization (WTO), the move could signal the start of more unilateral action by the Donald Trump administration, especially on the digital services front.

### **Conclusion**

- Till the time some global guidelines are agreed upon amongst the nations, for taxation of digital transactions, the conflict between Indian domestic law provisions and various tax treaties are expected to continue.
- One must expect many more changes and challenges in the taxation of digital transactions in the coming time and businesses must be flexible to adapt their business models appropriately to embrace these changes/ challenges and comply with laws



# INTERNATIONAL RELATIONS

## 1. Africa outreach by India and China

### Context:

- The article analyzes the differing approaches adopted by India and China with respect to their African outreach efforts.

### Africa's vulnerability:

- The COVID-19 pandemic would be devastating particularly in Africa, where economic and public health conditions are extremely vulnerable.
- Though the African countries have been able to curb the initial spread, they are still woefully ill-equipped to cope with a public health emergency of such magnitude due to shortages of masks, ventilators, and even basic necessities such as soap and water.
- Africa needs medical protective equipment and gear to support its front line public health workers. Africa has been extremely dependent on external aid.

India and China have been long-standing partners of Africa and have increased their outreach to Africa during the COVID pandemic.

### China's diplomacy:

The major steps taken by China to help the African countries include the following:

- China despatched medical protective equipment, testing kits, ventilators, and medical masks to several African countries.
- China's billionaire philanthropists have donated anti-coronavirus supplies to many African countries.
- Chinese embassies across Africa have been coordinating both public and private donations to local stakeholders.

### Objective:

- Beijing's 'donation diplomacy' in Africa aims to achieve three immediate objectives: shift the focus away from discussions on the origins of the virus in Wuhan, build goodwill overseas, and establish an image makeover.
  - \* Such donations will help raise China's profile as a leading provider of humanitarian assistance and "public goods" in the global public health sector.
- The aid diplomacy will help further strengthen China's relationship with the African countries.
  - \* China relies heavily on diplomatic support and cooperation from African countries on key issues in multilateral fora. China has used African support for securing votes for its candidates in multilateral forums like the Food and Agriculture Organization (FAO) and the World Health Organization (WHO).

### Challenges

- The sub-optimal quality of China's medical supplies and its deputing of medical experts have been frequently questioned from the aid receiving countries.
- China has also faced widespread backlash over the ill-treatment of African nationals in Guangzhou city which grew into a full-blown political crisis for China.

### India's diplomacy:

#### Increased focus on Africa:

- India's developmental outreach to Africa has seen a marked increase with Africa occupying a central place in Indian government's foreign and economic policy in the recent years.
- India's plans to open 18 new embassies mark increased diplomatic outreach towards Africa. These efforts have been supplemented by an improved record of Indian project implementation in Africa.

### COVID crisis:

- The major aspects of India's health diplomacy include the following:
  - \* Given India's reputation as a supplier of low-cost, generic medicines, India is sending consignments of essential medicines, including hydroxychloroquine (HCQ) and paracetamol, to 25 African countries in addition to doctors and paramedics at a total cost of around Rs. 600 million (\$7.9 million) on a commercial and grant basis.
  - \* The e-ITEC COVID-19 management strategies training webinars exclusively aimed at training health-care professionals from Africa and the South Asian Association for Regional Cooperation (SAARC) nations help in sharing of best practices by Indian health experts. Nigeria, Kenya, Mauritius and Namibia have been beneficiaries.
  - \* A few African countries such as Mauritius are pushing for health-care partnerships in traditional medicines and Ayurveda for boosting immunity. The Indian community, especially in East African countries, has also been playing a crucial role in helping spread awareness.
- India and its citizens have been involved in relief operations:
  - \* The African Indian Ocean island nations of Mauritius, the Seychelles, Comoros and Madagascar have received relief material under India's 'Mission Sagar'.
  - \* Prominent Indian businessmen and companies in Nigeria and Kenya have donated money to the respective national emergency response funds.

- \* Country-specific chapters of gurdwaras and temples have been involved in setting up community kitchens and organizing relief operations.

#### Comparative analysis:

- India and China, through their respective health and donation diplomacy, are vying to carve a space and position for themselves as reliable partners of Africa in its time of need.
- Though the objectives remain the same, there are significant differences in the approaches.
- Chinese diplomacy's major aspects:
  - \* Monetary aid
  - \* Relies on increasing its political influence in the continent
  - \* Focus on hard-infrastructure projects and resource extraction
  - \* Focuses on elite level wealth creation
  - \* Emphasis on strong state-to-state relations as opposed to people-to-people ties
- India's approach:
  - \* Focused on building local capacities and an equal partnership with Africans
  - \* There is an emphasis on people to people ties in many of the developmental and aid projects being undertaken by India

#### Conclusion:

- Though China's donation diplomacy towards Africa during COVID-19 has received mixed reactions, China still has an upper hand in Africa given its economic heft and political influence in Africa as compared to India.
  - \* China is Africa's largest trading partner.
- For India, the pandemic presents an opportunity to demonstrate its willingness and capacity to shoulder more responsibility in global affairs. The fact that even with limited resources, India can fight the virus at home while reaching out to developing countries in need is testament to India's status as a responsible and reliable global stakeholder.
- The two distinct models of India and China will come under greater scrutiny and would require both India and China to adapt to the rising aspirations of the African continent.

## **2. DiEM25**

- The Democracy in Europe Movement 2025, or DiEM25, is a pan-European political movement launched in 2015 by former Greek Finance Minister Yanis Varoufakis.
- The movement's main tendencies are alter-globalisation, social ecology, ecofeminism, post-growth and post-capitalism with an emphasis on implementation of a universal basic income.

- DiEM25 argues for creation of political organisations at a pan-European level and calls for a pan-European movement to confront the great economic, political and social crisis that Europe is going through.

## **3. G7 to G11**

#### Context:

- The US President Donald Trump has called the existing Group of Seven (G-7) club a "very outdated group of countries" and he wants to include India, Russia, South Korea, and Australia in the group making it G-11.

#### What prompted US to call for an expansion?

- Not all the countries of G-7 are among the most advanced now. India is both a military and economic giant but isn't part of the G7. So, its expansion, just like that of the United Nations Security Council, is called for.
- The US President Trump's decision to postpone the G7 summit calling it outdated, and attempts to expand the grouping to include other countries like India, Russia, Australia and South Korea reflect American desire to wrest back the global leadership initiative from China, as the US slowly begins to crawl back towards normalcy after the COVID-19 debacle.

#### Why has Trump chosen the four countries?

- If there's any country in Asia that comes anywhere close to China in population, economic and military numbers, it is India.
  - \* It is also the larger US policy of aiding the rise of India as a democratic counterbalance to a hegemonic China.
- South Korea is a tech and economic superpower and US is committed to defending it against any enemy.
- Australia is a natural ally for the US in the South Pacific, a region where China has been expanding its influence.
- That leaves Russia, a force to reckon with any day, given its military superiority. Trump has also usually got along with Putin, its unpredictable leader. Russia also shares a large border with China.

#### Should India play along as US takes on China?

- India has had a complex relationship with China. China's past record—it fought a war with India in 1962—makes it difficult for India to trust it. China and India are in a standoff in Ladakh. India and the US are natural allies. One is the world's largest democracy and the other the oldest.
- There is an urgent need for democracies and rules-based regimes that believe in fair trade and respect for intellectual property rights to come together. It may be time for India to play hardball with China.

#### Experts also caution India

- India is already a member of G-20, a body responsible for global governance.

- \* The G-7 was expanded to the G-20 when the West realized after repeated recessions that the global financial governance was not possible without including countries such as China, India, Turkey, South Africa, Australia and so on.
- The current American push for a new organisation is an attempt to isolate China.
  - \* While India should have no objection in joining the new club, it should not be pitted against China or Russia.
- Moreover, it is better for India to wait and watch for the time being as one is not certain whether Trump will come back to power after the present term. If a new president joins the White House, terms of engagement would be different.

#### China's response

- China has reacted by saying any attempts to draw a "small circle" against Beijing will be "doomed to fail" and become "unpopular".

#### Conclusion

- As former foreign secretary of India Shyam Saran has noted, "It has been New Delhi's experience that strong relations between India and the US, indeed with other major powers, give India greater room for manoeuvre and ability to manage the China challenge. The more isolated India is, the greater its vulnerability to Chinese pressures."
- India should, therefore, interpret Trump's comments on the expansion of G7 as an opportunity, not as a curveball that should be best avoided.

#### The Group of 7

- The G-7 or 'Group of Seven' are Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.
- It is an intergovernmental organisation that was formed in 1975 by the top economies of the time as an informal forum to discuss pressing world issues.
- Initially formed as an effort by the US and its allies to discuss economic issues, the G-7 forum has deliberated about several challenges over the decades, such as the oil crashes of the 1970s, the economic changeover of ex-Soviet bloc nations, and many pressing issues such as financial crises, terrorism, arms control, and drug trafficking.
- The G-7 was known as the 'G-8' for several years after the original seven were joined by Russia in 1997. The Group returned to being called G-7 after Russia was expelled as a member in 2014 following the latter's annexation of the Crimea region of Ukraine.

#### How the G-7 summit works?

- The G-7 nations meet at annual summits that are presided over by leaders of member countries on a rotational basis. The summit is an informal gathering that lasts two days, in which leaders of member countries discuss a wide range of global issues. The

host country typically gets to invite dignitaries from outside the G-7 to attend the Summit.

- The groundwork for the summit, including matters to be discussed and follow-up meetings, is done by the "sherpas", who are generally personal representatives or members of diplomatic staff such as ambassadors.
- The sherpa for Prime Minister Modi at 2019 summit was former Union Minister Suresh Prabhu.

#### The limitations of G7

- The success or otherwise of multilateral institutions are judged by the standard of whether or not they have successfully addressed the core global or regional challenges of the time. The G7 failed to head off the economic downturn of 2007-08, which led to the rise of the G20.
  - \* In the short span of its existence, the G20 has provided a degree of confidence, by promoting open markets, and stimulus, preventing a collapse of the global financial system.
- The G7 has not covered some of the striking issues haunting the global community such as the COVID-19 pandemic, climate change, the challenge of the Daesh, and the crisis of state collapse in West Asia.
- It had announced its members would phase out all fossil fuels and subsidies, but has not so far announced any plan of action to do so.
- The G7 countries account for 59% of the historic global CO2 emissions ("from 1850 to 2010"), and their coal fired plants emit "twice more CO2 than those of the entire African continent" and they continue to use them.

#### Need for a new institution

The world is in a state of disorder. The global economy has been stalled and COVID-19 will inevitably create widespread distress. Some nations have solutions and many don't. There is a need for countries to cooperate than ever before. Existing international institutions have proven themselves unequal to these tasks. Thus, there is a need to invigorate multilateralism.

A new international mechanism will have value only if it focuses on key global issues.

- It should support international law and prevent the retreat from liberal values on which public goods are centred.
- It should promote global public health and revive growth and trade in a sustainable way (that also reduces the inequalities among and within nations).
- On regional issues:
  - \* Iran should be prevented from acquiring nuclear weapons and,
  - \* They should be able to contribute to peace and stability in Afghanistan, the Gulf and West Asia

#### 4. H-1B visas

##### Context:

- The U.S. President has signed an executive order (EO) pausing new H-1B visas effective June 24, 2020 through the end of the year.

##### Details:

- H4 visas (H-1B dependents), L visas (intra-company transfers), as well as H-2B (non-agricultural workers) and J visas will be on pause through the year-end.
  - \* H-1B visa is required to work in a specialty occupation. Requires a higher education degree or its equivalent. Includes fashion models of distinguished merit and ability and government-to-government research and development, or co-production projects administered by the Department of Defence.
  - \* L1 visas allow companies to transfer highly skilled workers to US for a period of up to seven years.
  - \* H-2B visas allow food and agricultural workers to seek employment in the US.
- H-1B, H-2B, J and L visa holders, and their spouses or children already present in the US shall not be impacted by the new worker visa ban.
- The order was issued ostensibly to protect American jobs during the ongoing pandemic.
- It has been criticised by the tech industry as well as politicians on both sides of the aisle as damaging to the U.S. economy.

##### Why did the US suspend non-immigrant worker visas?

- Since it was started in 1952, the H-1 visa scheme has undergone many changes and revisions to allow or disallow certain categories of skilled workers in the US, depending on the economic situation of the country.
- The technology boom coupled with the arrival of the internet and low-cost computers in developing nations such as India and China saw a large number of graduates willing to work at relatively low costs in the US, a win-win situation for both the employer and the employee.
- However, it has since often been criticised for sending low cost workers to the US at the expense of domestic workers.
- In his executive order extending the ban, Trump said that while under normal circumstances, "properly administered temporary worker programs can provide benefits to the economy," the extraordinary economic contraction created due to COVID-19 posed a threat to the US workers.

##### How does it impact Indian IT companies?

- Indian IT companies are amongst the biggest beneficiaries of the US H-1B visa regime, and have since the 1990s cornered a lion's share of the total number of visas issued each year.

- Indian IT companies also offer subcontracts to Indian nationals already present in the US with valid H-1B visas.
- As of April 1, 2020, the US Citizenship and Immigration Services (USCIS) had received about 2.5 lakh H-1B work visa applications, according to official data.
- Indians had applied for as many as 1.84 lakh or 67 per cent of the total H-1B work visas for the current financial year ending March 2021.
- Apart from the suspension of these work visas, the executive order signed by Trump has also made sweeping changes to the H-1B work visa norms, which will no longer be decided by the currently prevalent lottery system.
- The new norms will now favour highly-skilled workers who are paid the highest wages by their respective companies.
- This could result in a significant impact on margins and worker wages of Indian IT companies which send thousands of low-cost employees to work on client sites in the US.
- However, as per research agency ICRA, the move will be mildly negative for the Indian IT services sector considering their high dependence on such visas.

##### Impact on America:

- The U.S. firms or others with U.S. operations who rely on skilled foreign nationals working in the U.S. will be unable to make new hires as long as the ban stands.
- Corporate America, already hit by the economic downturn since the pandemic struck, can hardly afford to accept even more losses as the recent order undermines the base of their workforce. Alternative workers are either not available domestically or would cost the company higher.
- Immigration has contributed immensely to America's economic success, making it a global leader in technology.

#### 5. India-Australia meet strengthens ties

##### Context:

- India-Australia held a bilateral virtual summit.
- It is the first time that the Indian Prime Minister held a "Bilateral Virtual Summit".

##### Details:

- India and Australia raised their relationship to a "Comprehensive Strategic Partnership" after the virtual summit.
- They concluded nine agreements including a Mutual Logistics Support Agreement (MLSA).
  - \* MLSA will allow both militaries the reciprocal use of bases, humanitarian and disaster relief cooperation, port exercises, and passage exercises.



- They issued a joint declaration on a “Shared Vision for Maritime Cooperation in the Indo-Pacific.”
  - \* The statement issued after the summit said, “Both India and Australia share a vision of a free, open, inclusive and rules-based Indo-Pacific region to support the freedom of navigation, overflight and peaceful and cooperative use of the seas by adherence of all nations to international law including the United Nations Convention on the Law of the Sea (UNCLOS) and peaceful resolution of disputes rather than through unilateral or coercive actions”.

#### **Other agreements announced**

- It included a framework arrangement on cyber technology, a MoU on mining and processing critical and strategic minerals including Australian rare earth metals used for electronics, governance, vocational training and water management.
- Both sides agreed to continue to deepen and broaden defence cooperation by enhancing the scope and complexity of their military exercises and engagement activities to develop new ways to address shared security challenges.

#### **A look at important stats with respect to Australia**

- With a GDP of more than US\$1.4 trillion, Australia is the 13th largest economy in the world, following closely behind Russia which stands at \$1.6 trillion.
- Australia is rich in natural resources that India’s growing economy needs. It also has huge reservoirs of strength in higher education, scientific and technological research.

#### **Australian strengths should be of interest and value to India**

- Canberra’s intelligence establishment is valued in many parts of the world.
- Australia has deep economic, political and security connections with the ASEAN and a strategic partnership with one of the leading non-aligned nations, Indonesia.
- Canberra has a little “sphere of influence” of its own — in the South Pacific (now under threat from Chinese penetration).

#### **Areas of cooperation**

- There are a host of emerging issues — from reforming the World Health Organisation to 5G technology and from strengthening the international solar alliance to building resilience against climate change and disasters — that lend themselves to intensive bilateral political and institutional engagement.
- It is the geopolitical churn in the Indo-Pacific that has opened up a massive space for consequential security cooperation between India and Australia.
- Delhi and Canberra know that neither of them can rely on the old formulae for securing their interests, thanks to the growing Chinese assertiveness and the uncertain US political trajectory.

#### **Five Power Defence Arrangement (FPDA)**

- It is a nonbinding defense pact which was set up back in 1971.
- The FPDA brings together the armed forces of the UK, Malaysia, Singapore, Australia and New Zealand.
- The FPDA has consistently initiated military exercises such as the Air Defense Exercises, the annual Exercise Suman Warrior (land-based exercise), Exercise Bersama Shield, and Exercise Bersama Lima. The FPDA has evolved into a credible military alliance in Southeast Asia.
- In the future Modi and Morrison must explore the possibilities for engagement between India and the FPDA.

#### **Conclusion**

- It is only by building a series of overlapping bilateral and minilateral platforms for regional security cooperation that Delhi and Canberra can limit the dangers of the growing geopolitical imbalance in the Indo-Pacific.

#### **'E-diplomacy'**

- It describes new methods and modes of conducting diplomacy and international relations with the help of the Internet and information and communication technologies (ICTs).

#### **Context:**

- The first India-Australia virtual leaders’ summit.

#### **Details:**

- The dangers posed by COVID-19 have compelled the traditional art of summit diplomacy to adapt. Just as corporations and educational institutions have migrated to online mediums, nation states are left with no choice but to do the same.
- E-summits are physically safer for leaders and also time-saving and economical.

#### **Challenges:**

##### **1. Effectiveness:**

- There is a danger that ‘e-diplomacy’ will become less productive in terms of deliverables, especially with respect to crucial sticking points.
- With backroom negotiations by lower-level bureaucrats communicating remotely, online summits may not be able to satisfy the broader political goals and bigger objectives.

##### **2. Threat of cyber security:**

- A major threat to virtual summits comes from cyber insecurity.
- In pre-COVID-19 times, summit venues used to be thoroughly sanitized and debugged to prevent sensitive foreign policy content from being spied upon or leaked. E-diplomacy is riskier and could be subject to hacking of classified content.



**Conclusion:**

- With Australia and India trying to forge coalitions of middle powers in sustaining the balance of power in the Indo-Pacific, gaps in diplomatic summits can convey weakening of collective resolve.
- Key partners like India and Australia have to get on with diplomatic relations and hold high-level meetings as part of their strategic signaling. Having online summit is better than no summit at all.

**6. Japan to rename islands disputed with China****Context:**

- A local council in southern Japan has voted to rename an area, including islands disputed with China and Taiwan.

**Details:**

- The local assembly of Ishigaki city in Japan approved a plan to change the name of the area covering the Tokyo-controlled Senkaku Islands, known by Taiwan and China as the Diaoyus, from "Tonoshiro" to "Tonoshiro Senkaku".
- Local media said another part of Ishigaki is also known as Tonoshiro, and the name change was cast as a bid to avoid confusion.

**Issue:**

- The uninhabited islands are at the centre of a festering row between Tokyo and Beijing and the move sparked anger in both Taiwan and mainland China.
- Beijing has denounced the move as illegal and a serious provocation.
- Taiwan says the islands are part of its territory, and also protested the move.

**7. Kohala Hydroelectric Power Project****Context:**

- China, under the multi-billion-dollar China-Pakistan Economic Corridor, will set up a power project in Pakistan-occupied Kashmir despite India's objection to it.

**Details**

- It is a 1,124-megawatt power project.
- The project will be built on the Jhelum River and aims at annually providing more than five billion units of clean and low-cost electricity for consumers in Pakistan.
- It is reported that this marks one of the largest investments of USD 2.4 billion in an independent power producer (IPP) in the region.

**India's Stand**

- India had protested Pakistan's plans to build a dam in Gilgit-Baltistan, saying such projects in territories under Pakistan's illegal occupation was not proper.

- India protested to Pakistan awarding a mega contract to build a dam in Gilgit-Baltistan.
- It has been asserted time and again that India's position is clear and the entire territory of Jammu and Kashmir is part of India.
- In the past too, India has opposed projects jointly taken up by Pakistan and China in Pakistan-occupied Kashmir as part of the China-Pakistan Economic Corridor (CPEC).

**8. Kholongchhu project**

- It is India-Bhutan's first hydropower joint venture project in Bhutan's less developed eastern region of Trashiyangtse.
- Kholongchhu project is one of four additional projects agreed to in 2008, as a part of India's commitment to help Bhutan create a total 10,000 MW of installed capacity by 2020.

**Context:**

- India and Bhutan took a major step forward for the construction of the 600 MW Kholongchhu project.

**Details:**

- It is the first time an India-Bhutan hydropower project will be constructed as a 50:50 joint venture, not as a government-to-government agreement.
- Once the project is commissioned, the JV partners will run it for 30 years, called the concession period, after which the full ownership will transfer to the Bhutan government.
- It is considered a milestone in the India-Bhutan partnership, under which four hydropower projects have been built in the last 30 years totalling a capacity of 2,100 MW, and another two are under construction.

**Road-blocks:**

- The inter-governmental agreement for the Kholongchhu project was signed after prolonged negotiations on the structure of the joint venture in 2014, and the foundation stone was laid when Prime Minister Narendra Modi travelled to Thimphu.
- Progress on preparing the site ground to a halt in December 2016 over India's new power tariff guidelines (on Cross Border Trade of Electricity – CBTE), until the government amended its guidelines after negotiations with the Bhutan government.
- However, according to the agreement finalised, the project would be completed in the second half of 2025.

**9. Persian Gulf littoral, cooperative security is key****Persian Gulf**

- It is the area of sea between Saudi Arabia and Iran.
- The lands around it are shared by eight countries (Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates), all members of the UN.



- These countries are the major oil and natural gas producers of the world bringing prosperity to their economies and helping the global community to meet its energy needs. This has added to the region's geopolitical significance.
- The region is also known for its unrest because of two reasons:
  - \* Many powers act in the region to influence countries creating proxy command centres.
  - \* The sectarian divide between Saudi Arabia and Iran.
- – leading to clashes and heightened tensions.

#### **British Control**

- For eight decades prior to 1970, this body of water was a closely guarded British lake, administered in good measure by imperial civil servants from India.
  - \* This control gave the British Empire exclusive powers in the Gulf in the key early decades of oil exploration and development in this century.
- When that era ended, regional players sought to assert themselves.

#### **American Interests**

- Regional rivalry and conflicts meant USA meddling in the region. A US State Department report in 1973 said, 'The upshot of all these cross currents is that the logic of Saudi-Iranian cooperation is being undercut by psychological, nationalistic, and prestige factors, which are likely to persist for a long time.'
- The Nixon and the Carter Doctrines were the logical outcomes to ensure American hegemony.
  - \* According to the Nixon Doctrine, the U.S. sought to supply arms and assistance to its "threatened" allies and friends, provided that they assumed the primary responsibility for providing the necessary manpower.

\* The Carter Doctrine is the term widely given to the US policy of ensuring western dominance of the greater Persian Gulf area and using military means if deemed necessary to ensure the unhindered export of Persian Gulf oil to international markets.

- The Iranian Revolution put an end to the Twin Pillar approach and disturbed the strategic balance.
- The Iraq-Iran War enhanced U.S. interests and role.

Finally the Security Council through Resolution 598 (1987) wanted to explore 'measures to enhance the security and stability in the region'.

Any framework for stability and security thus needs to answer a set of questions: security for whom, by whom, against whom, for what purpose? Is the requirement in local, regional or global terms? Does it require an extra-regional agency? Given the historical context, one recalls a Saudi scholar's remark in the 1990s that 'Gulf regional security was an external issue long before it was an issue among the Gulf States themselves.'

#### **The essential ingredients of such a framework would thus be to ensure:**

- Conditions of peace and stability in individual littoral states;
- Freedom to all states of the Gulf littoral to exploit their hydrocarbon and other natural resources and export them;
- Freedom of commercial shipping in international waters of the Persian Gulf;
- Freedom of access to, and outlet from, Gulf waters through the Strait of Hormuz;
- Prevention of conflict that may impinge on the freedom of trade and shipping and: prevention of emergence of conditions that may impinge on any of these considerations.
- Could such a framework be self-sustaining or require external guarantees for its operational success? If the latter, what should its parameters be?

#### **The GCC and the U.S. link**

- The past two decades have revalidated William Fulbright's observation that statesmen often confuse great power with total power and great responsibility with total responsibility. The war in Iraq and its aftermath testify to it.
- The U.S. effort to 'contain' the Iranian revolutionary forces, supplemented by the effort of the Arab states of the littoral (except Iraq) through the instrumentality of the Gulf Cooperation Council, or GCC (1981), to coordinate, cooperate and integrate to 'serve the sublime objectives of the Arab Nation' initially met with success in some functional fields and a lack of it in its wider objectives.

### Regional Instability and changed priorities of USA

- At the same time, geopolitical factors and conflicts elsewhere in the West Asian region (Yemen, Syria and Libya) has aggravated global and regional relationships and disturbed US-Iran relationship further.
- Iran's nuclear programme agreed to by the western powers and the Obama Administration, but is disowned by U.S. President Donald Trump, whose strident policies have taken the region to the brink of an armed conflict.
- This means USA has changed its priorities and might have failed to keep up the commitment to sub-regional security. Many GCC countries are now worried about threats (political and ideological rather than territorial) from Iran.

### An evolving transformation

- Growing threat has pushed countries to adopt individual strategies, conflicting tactical and subjective considerations without a common GCC threat perception.
- These have been aggravated by the global economic crisis, the immediate and longer term impact of COVID-19 on regional economies, the problems in the Organization of the Petroleum Exporting Countries (OPEC), and the decline in oil prices.
- One credible assessment done recently suggests that in the emerging shape of the region, 'Saudi Arabia is a fading power, UAE, Qatar and Iran are emerging as the new regional leaders and Oman and Iraq will have to struggle to retain their sovereign identities.'
- The GCC is effectively ended, and OPEC is becoming irrelevant as oil policy is now under the global control.
- These changes will be further amplified with external intervention bringing a fundamental transformation to how the Persian Gulf is viewed.

### Exploring working arrangements with Iran

- With the Arab League not living up to its objective, the GCC on life-support system, the Arab states of this sub-region are left with individual approaches to explore working arrangements with Iraq and Iran.
- Oman had always kept its lines of communication with Iran open.
- Kuwait and Qatar had continued to hold talks silently.
- UAE has also initiated similar pragmatic arrangements.
- These could set the stage for a wider dialogue. Both Iran and the GCC states could be the beneficiaries of such an arrangement.

Record shows that the alternative of exclusive security arrangements promotes armament drives, enhances insecurity and aggravates regional tensions. It unavoidably opens the door for Great Power interference.

### India's ties

#### 1. GCC

- The bilateral relationship, economic and political, with the GCC has blossomed in recent years. The governments are India-friendly and Indian-friendly and appreciate the benefits of a wide-ranging relationship.
- This is well reflected in the bilateral trade of around \$121 billion and remittances of \$49 billion from a workforce of over nine million.
- GCC suppliers account for around 34% of our crude imports and national oil companies in Saudi Arabia and Abu Dhabi are partners in a \$44 billion investment in the giant Ratnagiri oil refinery. In addition, Saudi Aramco is reported to take a 20% stake in Reliance oil-to-chemicals business.

The current adverse impact of the pandemic on our economic relations with the GCC countries has now become a matter of concern.

#### 2. Iran

- The relationship with Iran, complex at all times and more so recently, on account of overt American pressure, has economic potential and geopolitical relevance on account of its actual or alleged role in Pakistan and Afghanistan.
- Iran also neighbours Turkey and some countries of Central Asia, the Caucasus and the Caspian Sea region.
- Its size, politico-technological potential and economic resources, cannot be wished away, regionally and globally, but can be harnessed for wider good.

### What helps India?

- India has avoided involvement in local or regional disputes. Indian interests do not entail power projection; they necessitate in their totality, peace and regional stability, freedom of navigation and access to the region's markets in terms of trade, technology and manpower resources.
- Indian interests would be best served if this stability is ensured through cooperative security since the alternative of competitive security options cannot ensure durable peace.

### What is a doctrine?

- A doctrine is a statement of "principle of policy," that is, something larger and broader than "mere" policy.
- A doctrine is a flexible context within which specific policies are developed.
- Doctrines are important as statements of intention directed to foreign countries.

### Twin Pillars Policy

- U.S. policy to promote Iran and Saudi Arabia as local guardians of U.S. interests in the Persian Gulf region.

## 10. Russia-India-China trilateral grouping

### Conception of the Trilateral

- The proposal for a Moscow-Beijing-Delhi 'strategic triangle' had originally come from former Russian Prime Minister Yevgeny Primakov during his visit to India in 1998, when he argued that such an arrangement would represent a force for greater regional and international stability.

### A look at key Facts

- Together, the RIC countries occupy over 19 percent of the global landmass and contribute to over 33 percent of global GDP.
- All three are nuclear powers and two, Russia and China, are permanent members of the UN Security Council, while India aspires to be one.

### Reason for its creation

- The idea of strategic triangle took root with the end of the Cold War when the US assumed the role of global power.
  - \* The idea of the triangle raised much hope to build a multi-polar world that would enable the creation of a just and fair international economic and political order.
  - \* RIC grouping was imagined as a political and economic bloc pushing for the democratization of the global order and as a counterweight to the United States
- The idea of the strategic triangle got renewed attention in the post-9/11 world order. This time terrorism became an additional factor.
  - \* China faces separatist forces in Xinjiang which it categorises as terrorism.
  - \* India has its own concerns in Jammu and Kashmir.
  - \* Russia fears terrorism in Chechnya.

What binds the group together is the now strong partnership between Beijing and Moscow and the time-tested relations between Moscow and New Delhi. So, in a sense, Russia becomes the bridge between India and China, since it enjoys strong relations with both.

### How it helps Russia?

- Russia's role was key as its loss of power and influence on the world scene was a major cause of concern for its leadership. There was a growing and pervasive feeling in Russia that it surrendered its once-powerful position on the world stage for a position of little international influence and respect.
- It is against this backdrop that Russia tried to establish itself as the hub of two bilateral security partnerships that could be used to counteract U.S. power and influence in areas of mutual concern.
- It is Russia, which would gain the most in this strategic triangle. It would help Russia to check NATO's eastward expansion

### China's role

- While Russia witnessed a downward slide in its status as a superpower since the end of the Cold War, China emerged as a rising power that saw the U.S. as the greatest obstacle, if it was to achieve a pre-eminent position in the global political hierarchy.
- As a consequence, China recognized the importance of cooperating with Russia to check U.S. expansionism in the world, even if only for the short term.
  - \* In fact, American policies towards Russia and China moved the two states closer to each other, leading to the formation of a new balance of power against the U.S.
- RIC provides a platform where it can push its interests in Eurasia.

### Advantages for India

- We have trilateral meeting in the form of Japan-USA-India (JAI). We are part of Quad grouping. These groupings essentially revolve around the Indo Pacific and will confine India to being only a maritime power. By being part of RIC India is showcasing its continental power.
- It is important for India as an aspiring power to be able to thwart China's aspirations of being a hegemon in both the maritime and continental spheres. India cannot cede geostrategic space in the Eurasian supercontinent to China
- Even though India, China and Russia may disagree on a number of security issues in Eurasia, there are areas where their interest converge, like, for instance, on Afghanistan.
  - \* Primarily, none of them wants an Afghanistan, which is a haven for terrorist activities. So, they could work together as part of the RIC to ensure stable peace in Afghanistan and by extension, in Central Asia.

### Importance of Cooperation

- Counter Terrorism: These nations are vulnerable to terrorism. Their effective cooperation is important for containing terrorism in the region.
- Nuclear and Energy Cooperation: While Russia is energy rich country, both India and China are energy hungry countries.
- Peaceful resolution of conflicts: The RIC can play the role of a balancer in global affairs.
  - \* They have similar views like the volatile situation in the West Asia, particularly on issues like the sanctions on Iran.
- With the Northern Sea Route opening up due to climate change, the RIC has a common interest in ensuring that it is not left to the West and Russia alone and that India and China make the transition from rule followers to rule makers by helping formulate some of the rules governing the Arctic route.



**Challenges to RIC**

- 'Imbalance: Only Russia and China are permanent members of U.N. Security Council. India's membership is not fully supported by them.
- Different perceptions on USA: Russia and China would like to use the trilateral to send a signal to Washington that they are unhappy with its bloc-like approach to the Asia-Pacific. India, on the other hand, is decidedly wary of alienating the U.S. at this juncture.
- Alternative Grouping: The emergence of other groupings like BRIO, SCO etc. with summit level participation, has challenged the relevance Of RIC, which is merely periodic meeting of foreign ministers.

**Way forward**

- Given the multidimensional potential of the group, it is necessary to formulate dedicated working groups on terrorism, energy security, etc. This would help in more focused approach to these issues.
- The grouping must be made into a formal organization with permanent secretariat.
- Given the potential of the grouping, it must be converted into annual summit level meeting.

**Context:**

- External Affairs Minister S. Jaishankar will take part in the Russia-India-China trilateral

**11. Trump targets ICC with sanctions over Afghanistan war crimes case****Context:**

- U.S. sanctions on International Criminal Court employees.

**Background:****International Criminal Court:**

- The Hague-based International Criminal Court (ICC) has been set-up to prosecute war crimes, genocide and crimes against humanity.
- It was established in 2002.
- It has jurisdiction only if a member state is unable or unwilling to prosecute atrocities itself.

**War crimes in Afghanistan:**

- International Criminal Court (ICC) prosecutor wants to investigate possible crimes committed between 2003 and 2014, including alleged mass killings of civilians by the Taliban, as well as the alleged torture of prisoners by Afghan authorities and by the U.S. forces and the CIA.
- The ICC decided to investigate after prosecutors' preliminary examination in 2017 found reasonable grounds to believe war crimes were committed in Afghanistan and that the ICC has jurisdiction.

**Details:**

- The U.S. President has issued an executive order authorising sanctions against individuals involved in an International Criminal Court (ICC) investigation into whether U.S. forces committed war crimes in Afghanistan.
- The order authorises economic sanctions and travel curbs against Court employees. The order authorises the concerned authorities to block assets in the U.S. of ICC employees involved in the probe, and also block their entry into the U.S.

**U.S. arguments:****Membership:**

- Given the fact that the U.S. government has never been a member of the ICC, it claims that its citizens cannot be prosecuted against without the consent of the U.S. The U.S. administration claims that the probe threatens to infringe on U.S. sovereignty by pressurizing American service members and intelligence officers.
- Afghanistan, though a member of the ICC, has argued that any war crimes should be prosecuted locally.
- U. S. Congress has also passed the American Service-Members' Protection Act, requiring the President to protect American forces from prosecution in The Hague court, besides extending such commitment to the troops of its allies.

**Credibility:**

- The U.S. administration has stated that though the ICC was established to provide accountability, in practice the ICC has been unaccountable, ineffective over the years.

**Dubious objective:**

- The U.S. administration has accused that the ICC probe is being pushed forward with the dubious objective of maligning the U.S. and accused Russia of having a role.

**Rome Statute**

- On the other hand, the Rome Statute provides for the prosecution of crimes committed in the territory of any one of the 123 states-parties, even if the accused comes from a non-member nation.
- This is the basis for the current investigation wherein Afghanistan and the three European nations, the location of the alleged crimes, are within the ICC's jurisdiction, even if the U.S. remains outside.

**12. UN Arms Trade Treaty**

- It is a multilateral treaty aimed at regulating the global arms trade.
- It was envisioned as a tool to prevent conflict and human rights violations fueled by poorly regulated trade in arms, which could not conceivably be controlled via national legislation alone.
- It is designed to control the flow of weapons into conflict zones.



- \* The treaty calls for the international sale of weapons to be linked to the human rights records of buyers.
- \* It requires countries to establish regulations for selling conventional weapons.
- \* It seeks to prevent conventional military weapons from falling into the hands of terrorists or organized criminal groups, and to stop deals that would violate UN arms embargoes.
- Conventional weapons covered by the UN Arms Trade Treaty include tanks and other armoured combat vehicles, artillery, attack helicopters, naval warships, missiles and missile launchers, and small arms.
- It establishes common international standards for the regulation of the international trade in ammunition, weapons parts, and arms components.
- It does not regulate the domestic sale or use of weapons in any country.
  - \* It recognizes the legitimacy of the arms trade to enable states to provide for their own security.

#### **Context:**

- China will join a global pact to regulate arms sales.

#### **Details:**

- The Communist Party leadership's top legislative body has voted to adopt a decision on joining the UN Arms Trade Treaty.
- It comes after U.S. President Donald Trump announced plans to pull the U.S. out of the agreement in 2019, which entered into force in 2014.
- Beijing has stated that it is committed to efforts to enhance peace and stability in the world.
- Chinese Foreign Ministry spokesman told that joining the treaty was "another important measure for China to support multilateralism".

#### **Note:**

- India has not signed the treaty.
- One of the arguments made by India in 2013 against the treaty was that New Delhi had "strong and effective national export controls" on military hardware to ensure they don't fall into the wrong hands.
- Also, one of India's concerns is that the treaty does not include non-state actors in its purview, and therefore does not address the pressing concern of illicit trafficking and use of conventional arms by non-state actors. This is a major lacuna which may serve to make the treaty ineffective.

### **13. In pandemic crisis, bridging the gulf with West Asia**

#### **Context:**

- India-West Asia ties.

#### **Background:**

India-West Asia ties:

- For India, the West Asia/Gulf region holds significance for strategic and economic reasons ranging from diaspora to energy security.
  - \* An estimated nine million Indians work in West Asia.
  - \* The West Asian countries are major trading partners for India.
  - \* India gets around 60% of its hydrocarbon requirements from West Asia.

#### **Details:**

- The COVID-19 pandemic has had a detrimental effect on lives and economies the world over.

West Asia:

- The oil price crash, triggered by expectations of oversupply following a dispute on output caps between Saudi Arabia and Russia, exacerbated by the crash in demand due to COVID-19, will carry massive costs to the West Asian economies which are largely oil dependent economies.
- According to a Dubai Chamber of Commerce & Industry survey, more than 70% of businesses classified as small and medium-sized enterprises in Dubai may not survive over the months to come as labour critical industries such as tourism, conventions, hospitality and airlines bear the immediate brunt of the pandemic.
  - \* UAE's hospitality sector itself contributes 4.6% of the country's GDP, generating nearly 600,000 jobs. Some reports suggest that up to 30% of these jobs could be lost.
- The major sovereign wealth funds and other financial institutions in West Asia have been hit hard by COVID-19 as well. Some have seen their real estate and retail portfolios shrink dramatically over the last three months.
- Beyond the immediate effects, the oil price crash is expected to have a significant blow on the reform plans initiated in Saudi Arabia, specifically mega-projects such as the envisioned \$500 billion futuristic mega-city of Neom planned on the coast of the Red Sea, and other more structural efforts to open up the Saudi economy and move the country's financial ecosystem away from its dependence on petro dollars.

India:

- An estimated nine million Indians work in West Asia, responsible for sending back more than 56% of India's annual infusion of \$80 billion in remittances. The economic trouble in west Asia will have an adverse effect on remittances to India.
- The pandemic has initiated a reverse migration of Indian blue-collar workers as projects have stalled and infrastructure development has taken a hit amidst the contracting global economy.

- \* The return of semi-skilled and skilled workers into India, which is already struggling with jobs, may become a point of worry.

#### **Steps being taken:**

- The softening oil prices have helped India cushion the impact of the national lockdown on the balance of payments. India has also taken advantage of the low prices to build up its strategic reserves and is looking at offshore storage options.
- The government has set up an empowered group headed by the Cabinet Secretary to take necessary steps to attract FDI into India from regions including the West Asian region.
- To mitigate the challenges posed by the reverse migration from West Asia, the Indian government has launched the Skilled Workers Arrival Database for Employment Support (SWADES), which attempts to capture the skills profile of returning workers and house them in a central portal that can be accessed by Indian and foreign companies.

#### **Way forward:**

##### **Expedite existing projects:**

- As a starting point, there is a need to expedite ongoing projects involving West Asian entities like the proposed \$50 billion mega-refinery project, fast track resolution of litigation regarding the sale of a stake in Mumbai airport to the UAE sovereign fund and Abu Dhabi Investment Authority (ADIA). This will send out a positive signal to the markets.
- By creating a few immediate success stories, India has the opportunity to transform the landscape and attract the kind of long-term capital that the economy needs.

##### **Ease and incentivize investment:**

- The economic reforms announced recently by India bring much needed clarity to industrial and agricultural policy. There is a need for more policy measures to make India an attractive destination for capital from West Asia.
- A strong, positive message by India to the West Asian investors is crucial as both are well-placed to help each other during the current crisis.
  - \* The Indian economy is in need of foreign investment.
  - \* The West Asian Economy, looking to diversify its economy, can choose to invest in a growing economy like India.

## **14. U.S.-China Cold war**

#### **Context:**

- Deterioration of the USA – China relationship.

#### **Details**

The USA, under the Trump administration, has issued a couple of statements and action plans which is a clear indication that the competition between the U.S. and China is likely to sharpen in the post-COVID world.

- The Trump administration said it would revoke Hong Kong's special trade status under U.S. law.
- The administration also passed an order limiting the entry of certain Chinese graduate students and researchers who may have ties to the People's Liberation Army.
- The U.S. President has also ordered financial regulators to closely examine Chinese firms listed in U.S. stock markets, and warned those that do not comply with U.S. laws could be delisted.
- The U.S. government has decided to bar passenger planes from China from June 16.
- A trade war which President Donald Trump launched in 2018 is yet to be resolved fully.
- Trump and other officials in the administration have been attacking China over its handling of the COVID-19 pandemic.

These retaliatory moves indicate that the world's largest and second-largest economies have entered into a new cold war.

#### **Is it same as the USA- Soviet Union?**

- There are similarities between the current crisis and the Cold War.
  - \* The political elites of both China and the U.S., like the Soviet Union and the U.S. back then, see each other as their main rivals.
  - \* One can also see this antagonism moving from the political elite to the popular perception — the targeting of ethnic Chinese professionals and others in the U.S. and of American individuals or entities in China is a case in point.
- But there are key differences as well. Proxy conflicts between the U.S. and China are not seen as one witnessed during the Cold War between USA and Soviet Union. The world is also not bipolar any more.
  - \* There are third parties such as the EU, Russia, India and Japan. These parties increasingly have a choice whether or not to align with either power as they see fit and on a case by case basis.
  - \* This leads to a very different kind of international order than during the Cold War.
- Ties between China and the U.S. are still not as bad as they were between the Soviet Union and the U.S.
  - \* Beijing and Washington are still economically and financially entangled.
- Today, from trade and technology to the pandemic and Hong Kong, the battle lines have been drawn — China, which the Pentagon called "a revisionist power" in 2018, is the main rival of Washington, a position which the Soviet Union held during the Cold War.
- The possibility of a military confrontation is very low. But the era of cooperation, peaceful trade and pragmatism that had defined U.S.-China partnership since President Richard Nixon's reset in the 1970s seems to have made way for an aggressive leadership contest and deepening mutual mistrust.

### How the US- China relationship evolved?

- President Jimmy Carter terminated diplomatic relations with Taiwan in order to normalise relations with China in 1978;
- President George H.W. Bush washed away the sins of Tiananmen in 1989 for momentary geopolitical gain;
- Bill Clinton, who as a presidential candidate had criticised Bush for indulging the Chinese, proceeded as President to usher the country into the World Trade Organization at the expense of American business.
- All American administrations since the 1960s have been complicit in China's rise in the unrealised hope that it will become a 'responsible stakeholder' under Pax Americana.

But every Chinese leader from Chairman Mao to President Xi Jinping has been clear-eyed that the U.S. represents an existential threat to the continued supremacy of the communist regime.

- Mao put it best, when he told high-ranking leaders in 1959, that the "U.S. is attempting to carry out its aggression and expansion with a much more deceptive tactic... In other words, it wants to keep its order and change our system."
- The collapse of the Soviet Union only reinforced this view and strengthened China's resolve to resist by creating its own parallel universe.

### China's indirect confrontation with USA

China is building:

- An alternate trading system (the Belt and Road Initiative);
- A multilateral banking system under its control (Asian Infrastructure Investment Bank, New Development Bank);
- Its own Global Positioning System (BeiDou);
- Digital payment platforms (WeChat Pay and Alipay);
- A world-class digital network (Huawei 5G); cutting-edge technological processes in sunrise industries; and a modern military force.

It is doing this under the noses of the Americans and some of it with the financial and technological resources of the West.

What was believed to be a peaceful rise is inherently a clash with USA. Its military expansion in the South China Sea and direct hostility with allies of USA means China is turning hegemonic. This is a challenge to American power, influence and interests.

### How has US responded?

- U.S. is already at war with China, says a few officials from the Trump administration.
- But a few have also cautioned that this should not escalate into cold war as USA is still entangled to China's supply chains.

### Significance of Hong Kong to the west

- It is the last bastion for Western capitalism in the East, but more importantly, the torch-bearer of Western democratic ideals.
- Think of it as a sort of Statue of Liberty; it holds aloft the torch of freedom and democracy for all those who pass through Hong Kong en route to China.
- The new law passed by China is an assault on the very idea of democracy and liberty. Hong Kong now is caged under the authoritative regime of Communist China.

### Conclusion

- Will this form the ideological underpinning for the birth of a new Cold War? That will depend on who wins in Washington in November 2020.
- Post-election, temperatures could decrease, but a deep-rooted antipathy towards China has gripped the popular and political imagination in the U.S. Therefore, tensions will not go away.

### China's 'Wolf Warrior Diplomacy'

- It is a new approach inside China and reinforces a presumed transition of Chinese diplomacy from conservative, passive, and low-key to assertive, proactive, and high-profile.
- Wolf Warrior and Wolf Warrior II are Chinese action blockbusters that highlight agents of Chinese special operation forces. They have boosted national pride and patriotism among Chinese viewers.
- 'Wolf-warrior diplomacy', named after these movies, describes offensives by Chinese diplomats to defend China's national interests, often in confrontational ways.
- Many Chinese believe the Western media portrayal of China is highly biased, often with ideological and racist tinges. Wolf-warrior diplomacy is part of the Chinese government's endeavour to "tell the China story."

### Examples

- China's foreign ministry spokespersons Hua Chunying and Zhao Lijian have taken to Twitter to hit back against external criticisms of China's handling of the coronavirus outbreak and the poor quality of exported Chinese medical equipment.
- Zhao said in a tweet that "if someone claims that China's exports are toxic, then stop wearing China-made masks and protective gowns."

### Why is China resorting to "wolf-warrior diplomacy?"

- Since 2010, when China's GDP overtook Japan's as the world's second largest, the Chinese have become more confident and China's foreign policy has become more assertive.
- President Xi Jinping has advocated "a fighting spirit" on several occasions, whether speaking to soldiers or party officials.

- \* This has apparently raised the morale of Chinese officials and diplomats, and encouraged a more assertive style.
- “Wolf-warrior diplomacy” is evidenced not only in combative words but also aggressive actions.
  - \* For example, a Chinese coastguard ship allegedly sank a Vietnamese fishing trawler near the Paracel Islands. When Vietnam protested, the Chinese foreign ministry responded by saying that Vietnam’s claims to the area are “illegal.”

## 15. India-China Border Clash

### Context:

- Violence in the Galwan Valley on the India-China border has claimed the lives of 20 Indian soldiers.

### Where is Galwan Valley?

- The valley refers to the land that sits between steep mountains that buffet the Galwan River.
- The River has its source in Aksai Chin, on China’s side of the LAC, and it flows from the east to Ladakh, where it meets the Shyok River on India’s side of the LAC.
- The valley is strategically located between Ladakh in the west and Aksai Chin in the east, which is currently controlled by China as part of its Xinjiang Uyghur Autonomous Region.
- At its western end are the Shyok River and the Darbuk-Shyok-Daulet Beg Oldie (DSDBO) road. Its eastern mouth lies not far from China’s vital Xinjiang Tibet road, now called the G219 highway.



### Where does the Line of Actual Control lie?

- The LAC lies east of the confluence of the Galwan and Shyok rivers in the valley, up to which both India and China have been patrolling in recent years.
- After the June 15 clash, however, China has claimed the entire valley lies on its side of the LAC.

### Territorial claims and LAC claims

- They are not the same. The distinction between territorial claims and LAC claims is sometimes blurred.
- The LAC refers to territory under the effective control of each side, not to their entire territorial claim. For instance, India’s territorial claims extend 38,000 sq km on the other side of the LAC across all of Aksai Chin, but the LAC India observes runs through the valley.

It is true that the LAC has never been demarcated and there are differences in perception of where it lies in more than a dozen spots, but there have not been previous incidents in the valley

### Why Indian army did not use firearms?

#### Background

- Indian troops were armed. All troops on border duty always carry arms, especially when leaving post.
- Those at Galwan too did carry arms. But, Long-standing practice (as per 1996 & 2005 agreements) did not allow use of firearms during faceoffs.

#### 1996 Agreement

- The 1996 agreement is on Confidence-Building Measures in the Military Field along the Line of Actual Control in the India-China Border Areas.
- Article VI (1) of the 1996 agreement says “With a view to preventing dangerous military activities along the line of actual control in the India-China border areas... Neither side shall open fire, cause bio-degradation, use hazardous chemicals, conduct blast operations or hunt with guns or explosives within two kilometres from the line of actual control. This prohibition shall not apply to routine firing activities in small arms firing ranges,”
- However, it is Article VI(4) that is more applicable in the current instance: “If the border personnel of the two sides come in a face-to-face situation due to differences on the alignment of the line of actual control of any other reason, they shall exercise self-restraint and take all necessary steps to avoid an escalation of the situation. Both sides shall also enter into immediate consultations through diplomatic and/or other available channels to review the situation and prevent any escalation of tension.”

#### 2005 agreement

- In Article 1 “the two sides will resolve the boundary question through peaceful and friendly consultations. Neither side shall use or threaten to use force against the other by any means”.
- The 2013 agreement on Border Defence Cooperation also stated that neither side shall use its military capability against the other.



Since no round has been fired on the Sino-India border in Ladakh after 1962 and with a view to preventing any escalation, these routines of not firing have been drilled into the soldiers.

### **Possible factors for Chinese aggression:**

#### **India's border infrastructure:**

- India has been strengthening its border infrastructure along the LAC.
- The strengthening of the Darbuk-Shyok-Daulat Beg Oldi road may have angered the Chinese. The Chinese demand in the ongoing negotiations is also premised on India stopping its infrastructure development.

#### **Change in the status of J&K:**

- One popular argument is that China's move is driven by local factors such as India's decision to change the status of Jammu and Kashmir and Ladakh

#### **Bilateral tensions:**

- The relations between the two countries have been steadily deteriorating.
- India has been against China's Belt and Road Initiative (BRI) and the China-Pakistan Economic Corridor (CPEC). China further views India's assertions regarding Gilgit-Baltistan as an implicit attack on the CPEC.
- India has put curbs and restrictions on Chinese foreign direct investment.

#### **China's internal dynamics:**

- The internal pressures that have been generated within China — in part due to the COVID-19 pandemic, are also influencing Chinese behaviour.
- COVID-19 pandemic is the most serious health crisis that China has faced since the founding of the People's Republic of China in 1949. The Chinese economy has been on the downslide which is also contributing to increasing political pressure on the country's leadership.
- The coupling of political and economic tensions has greatly aggravated pressures on Chinese leadership and the rising tide of anti-China sentiment the world over has further worsened matters.
- Chinese aggression has been observed not only along the LAC but also in the South China Sea. This might indicate a deliberate planning on the part of the Chinese leadership to divert attention from domestic issues.

#### **India's alignment with the U.S.:**

- While India professes to be non-aligned, it is increasingly perceived as having aligned with the U.S.
- India's United States tilt is perhaps most pronounced in the domain of U.S.-China relations. Recent instances are often highlighted to confirm the perception that India tends to side with the U.S. and against China whenever there is a conflict of interest between the two.

- \* An evident degree of geopolitical convergence also exists between the U.S. and India in the Indo-Pacific, again directed against China.
- \* India is a member of the Quad (the U.S., Japan, Australia and India) which has a definite anti-China connotation.
- \* The U.S. President's proposal of redesigning the G-7, including countries such as India (India has conveyed its acceptance), but excluding China, provides China yet another instance of India and China being in opposite camps.

- India is being increasingly projected as an alternative model to China, and being co-opted into a wider anti-China alliance which China clearly perceives as provocation.

#### **India's traditional clout in its neighbourhood was slipping:**

- For India, tensions with Pakistan have been high keeping the troops occupied in the border areas.
- Nepal raised boundary issues with India.
- Sri Lanka is diversifying its foreign policy and China is making deep inroads into that region.
- Bangladesh was deeply miffed with the Citizenship Amendment Act.
- Even in Afghanistan, where Pakistan, China, Russia and the U.S. are involved in the transition process, India is out.

A confluence of all these factors, which point to a decline in the country's smart power, allowed China to make aggressive moves on the LAC.

### **Concerns:**

- Though the LAC has never been demarcated but there have not been previous incidents in the valley. By now staking a claim to the entire Galwan Valley and up to the confluence of the rivers, China is, in India's view, unilaterally altering the LAC.
- This goes against the 1993 Border Peace and Tranquility Agreement (BPTA), under which India and China agreed to strictly respect and observe the LAC between the two sides.

#### **Undemarcated borders:**

- The alignment of the LAC has never been agreed upon, and it has neither been delineated nor demarcated.
- There is no official map in the public domain that depicts the LAC. The current understanding of the LAC reflects the territories that are, at present, under the control of each side, pending a resolution of the boundary dispute.

#### **Difference in claims:**

- For the most part, in the western sector, the LAC broadly corresponds with the border as China sees it. However, India and China do not agree on the alignment of the LAC everywhere.



- Differences in perception, particularly in 13 spots in the western, middle and eastern sectors of the border, often lead to what are called “face offs”, when patrols encounter each other in these grey zones that lie in between the different alignments. Some of these areas are Chumar, Demchok and the north bank of the Pangong Lake in the western sector, Barahoti in the middle sector, and Sumdorong Chu in the east.

#### Chinese tactics:

- China has in several territorial disputes, intentionally left its claims ambiguous.
- The Chinese haven't stuck to their previously agreed positions. China's alignments of the LAC have kept changing.
- The border skirmishes along the Line of Actual Control seem to be indicative of the Chinese approach to use the border problem to pressurize India on other issues.

#### Where did we go wrong?

- Refusal to respond once the issue was discovered
- Loss of nerve in backing the ground troops
- Sharing the harsh ground reality with the nation
  - \* The general public were not informed about Chinese aggression
  - \* True, sharing every detail in the public domain is not possible when it comes to negotiating sensitive issues of national security.
  - \* Indeed, the solution to the current crisis, and the disengagement that is needed urgently at various points along the LAC, can make progress only through diplomacy. At the same time, a blanket of silence hardly serves the government's interests.
  - \* The absence of timely and credible information will only fuel speculation and alarm.
- Statement from the highest administrative office has to be clear without any ambiguity.
- There has been an obsession concerning the threat from Pakistan ignoring the Chinese hostility and timely moves.

#### Intelligence Failure

- The principal responsibility for intelligence assessment and analysis concerning China, rests with the National Security Council Secretariat (NSCS) and India's external intelligence agency, the Research and Analysis Wing (R&AW), and to a lesser extent, the Defence Intelligence Agency.
- R&AW, lack of domain expertise, and an inadequacy of China specialists might also have been a contributory factor.
- Lack of long-term foreign policy foresight combined with intelligence failure to anticipate the Chinese incursion

#### Summit diplomacy

- “Summit conferences applies to the meeting of heads of government of the leading powers in an effort to reach broad measures of agreement”

#### Why there are more summits?

- The rise of summitry is a consequence of the paucity of resources of smaller nations who are less able to finance and sustain a vast diplomatic service and thus rely on summits for representation and negotiation.
- It will speed up process as heads of the countries are directly negotiating

#### Concerns

- Preference given recently to Summit diplomacy over traditional foreign policy making structures proved to be a severe handicap.
- Summit diplomacy cannot be a substitute for carefully structured foreign office policy making.
- Summits put professional diplomats briefly into the shade
  - \* India believed the tensions between India and China was diffused after Doklam crisis as we had meetings at the highest level in Wuhan and Mamallapuram.
  - \* Personal bonhomie with leaders will not result in friendly ties with countries.
  - \* 1. Prime Minister Nehru had good equation with Premier Zhou En-lai

#### What's next?

- Bilateral relations in other areas will be under considerable strain. Soft landings cannot be expected.
- No leadership-level contact between the top leaders of the two countries can be anticipated in the near term.
- Indian businesses in China and Chinese business operations in India can expect the going to be tougher than before. The scenario on trade and investments could encounter similar obstacles.
- In areas that impinge on national security, as in the cyber field and in telecommunications, and in technologies that enable spying and surveillance (5G, for instance), stringent controls, exclusions and clampdowns can be expected in the treatment and the entry of Chinese companies in India.

#### Should India remain Non-Aligned?

#### Yes

- The circumstances that led to the India-China war of 1962 offers an analysis of the Chinese approach.
- Faced with the disaster of the Great Leap Forward and increasing isolation globally, the Chinese chose to strike at India rather than confront Russia or the West.

- This is not the time for India to be seen as the front end of a belligerent coalition of forces seeking to put China in its place.
- India has consistently followed a different policy in the past, and it is advisable that it remains truly non-aligned and not become part of any coalition that would not be in India's long-term interest.

### **No**

- It will be in India's economic and strategic interests to align with the US and the Western world which will remain together despite the fissures under Trump. India needs investments, technology, and a manufacturing ecosystem to employ millions of its young population and improve its living standards.
  - \* It requires advanced weapons and technologies for its military.
  - \* India is ambitious and wants to be a great power and the US and the Western world recognise this and are willing to partner India.
- US is in talks with India to restructure Global Supply Chains. The US is encouraging its companies to look at India as an alternative to China.
  - \* This presents a big opportunity for India whose continental size, large market, young and skilled labour, and shared values with the West makes it an attractive destination. In fact, an alliance of democracies could crystallise with economic cooperation at its core.
- Defence ties between the two have been cemented with increasing weapons sales and important defence agreements.
  - \* There are regular bilateral and multilateral military exercises and dialogues on economic and strategic cooperation.
- On the other hand, Beijing wants to keep India boxed into South Asia, and tries to keep it off balance using Pakistan which it arms and supports. It has made inroads into the region using the Belt and Road Initiative (BRI).
  - \* It continues to block India's membership in the Nuclear Suppliers Group (NSG) and continues to needle New Delhi in the UNSC over Kashmir

Much of India's diplomacy in the last few years has been to counter China and its influence. India faces China as a competitor in Africa, West Asia, Central Asia and the Indo-Pacific. Indo-US ties are complementary, and a formal alliance will help realise the full potential of these relations.

### **Conclusion**

- Non-alignment or being a swing state makes sense if the gains to be derived from either side are equal. China will not be to India, what the Soviet Union was.
- In the post COVID-19 world, India will have to make a disruptive choice — of alignment

### **Way forward:**

Given the current circumstances, India should strategize an action plan aimed towards protecting its sovereign interests.

### **Prepare militarily:**

- India needs to be prepared, continue to build roads and improve the infrastructure along the border, to keep itself ready to deal with any contingency.
- India must improve the military capacity of the tri-service Andaman and Nicobar Command given its immense geostrategic value, as it overlooks Asia's maritime strategic lifeline and the world's most important global sea lane.

### **Pressure points:**

- India could choose to leverage the sensitivity of the Chinese to the one-China policy and other vulnerabilities like Tibet issue and Hong Kong protests, to force a change in China's attitude.
- This would allow India to signal to China that it has options, and that China would be wise not to escalate these situations too far.

### **Shifting focus:**

- To counter China India must look for options beyond LAC.
- The South China Sea/Indian Ocean Region maritime domain presents India with the best options where the regional geopolitical context is favorable.
  - \* India should demonstrate that it is willing and capable of influencing the maritime balance in East Asia, where China faces off a combination of the United States, Vietnam, Australia, Indonesia and sometimes Malaysia and the Philippines as well.
  - \* China perceives a vulnerability in the Malacca strait given its marked dependence on the sea lines of communication for its vast trade and energy imports.

### **Going global:**

- India should go global to defend against China. India's counter to Chinese power in the Himalayas should be to assume a more global role of its own.
- In Asia and Africa, debt-traps induced by the BRI are gradually stoking discontent. If India focuses on leveraging its advantages as a development partner, particularly in the post-COVID-19 era, it can use its newfound influence as a bargaining chip against Chinese interests in these countries.

### **Building alliances:**

- India must build power-balancing alliances.
- Many countries are seeking leadership from other quarters to counter-balance Chinese influence. In Southeast Asia, countries are pushing back against Chinese aggression in the South China Sea.

\* This provides an opportunity to build partnerships with such countries to balance China's growing influence.

- India can give itself leverage against China by improving its bilateral relationships with other countries that are similarly worried about China's growing influence — such as Australia, Vietnam, Japan, and even the U.K.
- Several foreign policy experts argue that India's strategic dealing with China has to begin with South Asia. In this regard, it is important to reinvigorate SAARC.

\* One way to reinvigorate SAARC is to revive the process of South Asian economic integration

#### **Aligning with the United States:**

- This is also an opportunity for India to align its interests much more strongly and unequivocally with the U.S. as a principal strategic partner.
- A closer alignment with the U.S. represents India's opportunity to counter China, while efforts to foster regional partnerships and cultivate domestic military capabilities, although insufficient by themselves, could play a complementary role.
- Moving into a closer partnership with the US would allow India an opportunity to rebalance the Indo-Pacific region.
- India should also infuse more energy into its relations with Japan, Australia, and the ASEAN.

#### **Taking the long view:**

- India's leverage and balancing power within the Indo-Pacific and the world beyond stems from its strong democratic credentials, the dynamism of its economy, its leading role in multilateral institutions, and the strategic advantage of its maritime geography — an asset possessed by few other nations, and which must be deployed much more effectively to counterbalance the Chinese ingress into this oceanic space that surrounds us.
- The events in Galwan Valley should be a wake-up call to many of India's Asian friends and partners enabling a high-resolution envisioning of Chinese aggressiveness.

#### **Conclusion:**

- Good neighbourhood relations are crucial for national stability and well-being.
- If India is to disengage from economic involvement with China, and build the capacities and capabilities it needs in manufacturing, and in supply chains networks closer home, it cannot be a prisoner of the short term.
- It is time for India to boldly take the long view in this area as also on its South Asia policy.
- India cannot continue to remain in a "reactive mode" to Chinese provocations and it is time to take an active stand. Since India's choices vis-à-vis China are circumscribed by the asymmetry in military power, resort must be sought in realpolitik

- This would force China to reconsider its tactics and force it towards negotiations with India.

## **16. High-Altitude Warfare**

### **Context**

- The violent standoff between Indian and Chinese troops in Galwan Valley of Ladakh region has thrown the spotlight on high-altitude warfare and the challenges that troops face, particularly when advantageous positions on the heights are occupied by the other side.

### **How is high-altitude warfare fought?**

- High-altitude warfare is fought keeping the terrain and weather in mind.
- The kind of infrastructure and training that the troops require for high-altitude warfare are key factors.
- The evolution of such warfare goes back a long way: European countries had mountain brigades in view of the kind of terrain prevalent in those countries.
- The harshness of the terrain calls for a specialised kind of training to prepare soldiers in terms of mindset and acclimatisation.

### **How is India equipped in such warfare?**

- Generally, India is considered a hub of mountain warfare skills since most of the country's north and northeast requires such skills.
- The troops are imparted training in basic and advance training in mountaineering to make them equipped for mountain warfare
- Ladakh Scouts are considered the best in this kind of warfare.
- Mountain chop, a tactic involved in such warfare, evolved in India where the mountainous terrain is very difficult to scale.

### **Approaches to be employed**

- The most difficult approaches where the enemy is likely to give the least resistance need to be used efficiently.
- The mindset of the enemy sitting above needs to be assessed. Taking stock of the entire situation, one needs to find out the easiest approaches.

### **What are the challenges involved in warfare in a high-altitude place like Galwan Valley?**

- A big factor is who has taken defensive positions and who is sitting on higher ground. Once troops are sitting on high ground, it becomes very difficult to dislodge them from there. In a place like Galwan Valley, which is absolutely barren, there is not much concealment.
- The soldier on high ground is absolutely stationary, which makes those on lower terrain easy targets; the enemy can pick them up one by one.
- Normally in mountain warfare, troops on lower ground use a combat ratio of 1:6, but in circumstances as in Galwan, it may go up to 1:10

**How to overcome the vulnerability?**

- Generally, mountain warfare is fought using the period of darkness to reach the opposing army, engage and overpower them before the first light of day.
- Without adequate trained troops who are well-versed with the terrain and are properly acclimatised, it is not an easy game.

**What are the other challenges faced by soldiers in high altitudes?**

- The first major factor is acclimatisation since the oxygen supply reduces drastically.
- Next, the load carrying capacity of individuals reduces drastically.
- Things move very slow in the mountains and mobilisation of troops consumes time.
- Thus, time and place need to be kept on top priority when deciding where the troops have to be stationed and how they have to be mobilised.

**What are the logistical challenges in this kind of warfare?**

- One major challenge is that weapons jam, particularly in high-altitude areas.
  - \* When a soldier is at a height of 17,000 ft or above, it is very cold, and he needs to grease the weapons and clean the barrels at least once a week to ensure they function efficiently. But at the time of combat, this becomes difficult.
- Vehicles do not start when fuel jams. If the fuel is diesel, it won't ignite unless it is mixed with thinners or other chemicals to make them thin enough to fire the engine.
- For communication equipment, troops need to carry more batteries because they drain very quickly at high altitude. While a battery tends to last for 24 hours in the plains, it will drain in 1-2 hours in these severely cold areas.
- Transport animals such as mules need to be used to maintain adequate supplies, which is not an easy task.
- Weather constraints also play a major factor.

Planning has to be done in advance, with recesses carried out, which again is difficult in the mountains. There has to be a contingency plan to first identify the tactical points that need to be used in case of an assault.

**What kind of training do Indian troops get in mountain warfare?**

- First, the troops are trained in skilled mountaineering techniques, rock-craft as well as mountain craft. The training continues whenever the units are inducted.
- Then comes the acclimatisation to avoid non-battle, cold casualties. Almost all units have these trainers who keep troops well-equipped and efficient to meet any contingency.

**17. History, the stand-off, and policy worth rereading**

- The article talks about China's legendary revolutionary leader Mao Zedong's five finger policy (with respect to Ladakh, Sikkim, Bhutan, Nepal and Arunachal Pradesh) and how India should cast a grand strategy to renew its compact with each of those areas in the current situation.

**Mao's five finger policy:**

- The deadly clashes at Galwan and the ongoing stand-off between India and China on the ridges or fingers around the Pangong Tso are a metaphor for the wider conflict between the two countries over all the areas that Chinese strategy refers to as the "five fingers of the Tibetan palm".
- In the 1950s, Mao described Tibet as the right hand palm, while Ladakh, Sikkim, Bhutan, Nepal and Arunachal Pradesh are five fingers.
- According to the construct, attributed to Mao, it was China's responsibility to liberate the fingers.
- Sixty years ago, India began to set about ensuring that quite the reverse ensued, and all five fingers were more closely attached to India, not China.

**India's countermove:**

- In the 1950s, even after India and China signed the Panchsheel agreement in 1954 and before the 1962 China-India war, the Nehru government had begun to worry about some of China's proclamations.
  - \* Especially after the flight of the Dalai Lama to India in 1959, China began to demand "self-determination in Kashmir".
  - \* The Chinese press and radio launched a propaganda war against India, while the Chinese government allowed Naga and Mizo dissidents into China for refuge and training.
- More importantly, school textbooks there began to depict the "five fingers" as a part of China, in the 1950s.

**Three-pronged foreign policy approach:**

- The three-pronged foreign policy New Delhi set into motion during the 1962 war, that provided an effective counter to Mao's five finger policy over the course of the century, is perhaps not so well understood.

**1) Managing the borders**

- The first was a push for building border infrastructure and governance.
- In the mid-1950s, the government piloted a project to build the Indian Frontier Administrative Services (IFAS) for overseeing NEFA (Arunachal Pradesh) and other areas along the India-China frontier.
- A special desk was created in the Ministry of External Affairs for officers who would tour all the regions from NEFA to Ladakh in order to make suggestions for the rapid development of these areas. It was wound up in 1968.



- The IFAS's role has since been transferred to the Indian Army and the Border Roads Organisation.
- It is an idea worth revisiting, especially as areas along the frontier continue to complain of neglect and a lack of focus from the Centre.

## 2) Outreach and treaties

- The second prong was a series of treaties that were signed with neighbours such as Nepal and Bhutan, and the consolidation of control, militarily and administratively, of other territories that acceded to India, including Ladakh as a part of Jammu and Kashmir (1947), and NEFA (1951).
  - \* In 1950, India signed a treaty with Sikkim that made it a "protectorate", and by 1975 the Indira Gandhi Government had annexed Sikkim and made it the 22nd State of India.
- Each of these treaties built unique relationships with New Delhi, tying countries such as Nepal and Bhutan in ways that were seen as a "win-win" for both sides at the time.
- However, over time, the treaties have outlived their utility, and the benefits of unique ties with Nepal and Bhutan, including open borders and ease of movement, jobs and education for their youth as well as India's influential support on the world stage, have waned in public memory.
- China was not able to make inroads with Bhutan as it did with Nepal because the Indian government renegotiated its 1949 Treaty of Perpetual Peace and Friendship between the Government of Bhutan of 1949 with the India-Bhutan Friendship Treaty in 2007.
  - \* This has held India and Bhutan ties in good stead, even during the Doklam stand-off between India and China in 2017 in the face of severe pressure from China.
- New treaties may not, in themselves reduce India's security threat from China in its neighbourhood, but they create space for a more mutually responsive diplomacy that is necessary to nurture special relationships.

## 3) The Tibet Issue:

- For the third prong, India's policy towards Tibet should be looked at more closely.
- While New Delhi's decision to shelter the Dalai Lama and lakhs of his followers since 1959 is a policy that is lauded, India must now look into the future of its relationship, both with the Tibetan refugee community in India, as well as with its future leadership.
- At present, the Dalai Lama has the loyalty of Tibetans worldwide, but Karmapa Lama, who lived in India after his flight from China in 2000, and was groomed as a possible political successor, has now taken the citizenship of another country and lives mostly in the United States.
- Given that it is home to so many Tibetans, India must chart a more prominent role in this discourse.

## Conclusion:

- Finally, it is necessary to introspect on how India's own reorganisation of Jammu and Kashmir in August 2019 has changed the security matrix and threat parameters for India, and its neighbours.
- While Pakistan's extreme reaction to the move was expected, China's reaction was perhaps not studied enough.
  - \* Beijing issued a statement decrying the impact on Jammu and Kashmir.
  - \* Also a statement specifically on Ladakh, calling it an attempt to "undermine China's territorial sovereignty by unilaterally changing its domestic law" and warning that the move was unacceptable and will not come into force.
- Home Minister's vow in Parliament, to take back Pakistan Occupied Kashmir (PoK) and Aksai Chin was not taken lightly either, as China's stakes in PoK now go beyond its historical closeness with Pakistan, to its investment in the China-Pakistan Economic Corridor that runs through it.

As the government readies its hand on dealing with China, it must not lose sight of every finger in play.

## **China disregarding historical commitments**

### Anglo-Chinese Convention of 1890

The treaty, called the "Convention between Great Britain and China relating to Sikkim and Tibet", essentially paved the way for the colonial power to annex the small state of Sikkim.

- Under the Anglo-Chinese Convention of 1890, the Sikkim-Tibet border was agreed upon and in 1895 it was jointly demarcated on the ground.

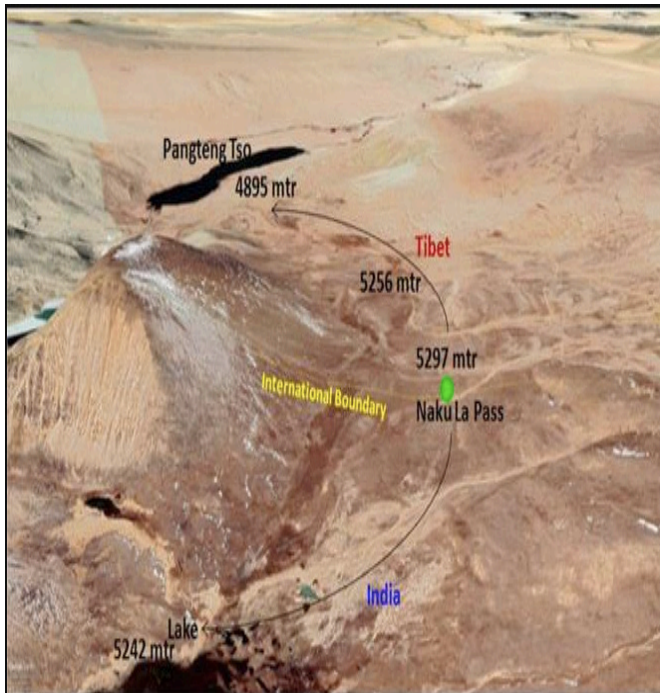
The treaty's first article has been particularly highlighted by Chinese officials:

- "The boundary of Sikkim and Tibet shall be the crest of the mountain range separating the waters flowing into the Sikkim Teesta and its affluents from the waters flowing into the Tibetan Mochu and northwards into other rivers of Tibet. The line commences at Mount Gipmochi, on the Bhutan frontier, and follows the above-mentioned water-parting to the point where it meets Nepal territory," Article 1 said.

The second article recognized the British government's control over Sikkim.

- "It is admitted that the British Government, whose Protectorate over the Sikkim State is hereby recognised, has direct and exclusive control over the internal administration and foreign relations of that State, and except through and with the permission of the British Government, neither the Ruler of the State nor any of its officers shall have official relations of any kind, formal or informal, with any other country," the treaty said.





#### **China's acceptance of Sikkim as integral to India**

- The new government of the People's Republic of China, which took power in 1949, confirmed this position in a formal note to the Government of India in 1959.
- Agreement on this alignment was reiterated in the 2003 Sino-Indian agreement to promote trade between Sikkim and Tibet via Nathu La. China has also formally recognized Sikkim as an integral part of India.

#### **Context**

- Major scuffle took place at Naku La.

#### **Issue Area**

- The meetings between former Prime Minister Atal Bihari Vajpayee and Chinese Premier Wen Jiabao in 2003 and maps exchanged subsequently indicated that India recognised the Tibetan Autonomous Region as a part of China, and Beijing recognised Sikkim as a State of the Indian Union, the boundary at Sikkim while undisputed, remains undemarcated on the ground.
- China may now be opening up a front in Sikkim due to the ambiguous official position of the boundary.
- In 2017, after the Doklam stand-off near the India-Bhutan-China trijunction, the then Foreign Secretary S Jaishankar informed the Parliamentary Standing Committee that India accepted the 1890 treaty as "the basis for alignment", but the treaty had only been "partially implemented on the ground".

#### **Defence experts' opinion**

- With a perceptible shift in stand by China, and incidents of more intrusive patrols by the PLA, experts say that not only will the two sides need to negotiate

to resolve the stand-off at Naku La, but India should also have more diplomatic focus on laying down the line firmly to Beijing on the boundary in Sikkim.

#### **18. Is China's 'peaceful development' over?**

- The concept of "peaceful rise" (Zhongguo heping jueqi) was an official policy which emerged under the leadership of Hu Jintao. The term was an attempt to rebut against the "China threat theory".
- It is also referred to as "China's peaceful development".
- The "peaceful rise" concept sought to characterise China as a responsible world player, emphasising soft power and that China is committed to its own internal issues and improving the welfare needs of its citizens before interfering in world affairs.
- The term is used primarily to reassure the nations of Asia and the United States that the rise of the PRC in military and economic prominence will not pose a threat to peace and stability, and that other nations will benefit from PRC's rising power and influence.

#### **How would it work?**

- Part of this doctrine dictates that the PRC will avoid neomercantilism and protectionism.
- In diplomacy, the doctrine calls for less assertiveness in border disputes such as those concerning the Spratly Islands, Senkaku Islands, and South Tibet.
- the leadership of the country has also embarked on a program of "neighbourhood diplomacy," emphasising good neighborliness and friendship and partnership

#### **Context:**

- As news broke about the violent clashes between Indian and Chinese troops in the Galwan Valley of eastern Ladakh, a Chinese J-10 fighter briefly entered Taiwan's air defence zone, prompting the self-ruled island to scramble its aircraft in response.

#### **China's approach towards its neighbourhood:**

- Chinese incursion into Taiwan's airspace.
- Chinese vessels had entered the waters of Malaysia and Vietnam.
- Chinese Coast Guard ships pursued Japanese fishing boats in waters claimed by both countries.
- All these incidents point to a newfound aggressiveness in China's approach towards its already troubled neighbourhood, from the Himalayas to the South and East China Seas.

#### **Concerns:**

- The whole series of positions China has taken with respect to Taiwan, Tibet, Hong Kong, national sovereignty or whatever problems they have with the U.S. is an indication that China seems to have come out of its "peaceful rise" policy.

- In Hong Kong, which has been seeing anti-China protests for a year, Beijing has introduced a new national security law, granting itself broader powers in the Special Administrative Region.
- In the middle of the COVID-19 outbreak, China now appears to be overseeing an expansive foreign policy that pushes the boundaries.
- When Australia pushed for an investigation into the pandemic outbreak, Beijing punished the country by imposing trade curbs.

#### **Conclusion**

- The "China Dream", laid out by President Xi after he took power in 2012, thus seeks to turn the country into a wealthy, strong and modern global power by 2049, the centenary of the Communist revolution.

### **19. Pakistan- China Angle**

#### **Background:**

- China and Pakistan are making coordinated efforts to challenge India's presence in the Kashmir-Ladakh region.
  - \* Pakistan has intensified its efforts to infiltrate terrorists into the Kashmir Valley.
  - \* China has undertaken provocative measures on the Ladakh front to assert control over disputed areas around the Line of Actual Control (LAC).

#### **Details:**

Overlapping interests:

- China and Pakistan would like India to be preoccupied with taking defensive measures in Kashmir and Ladakh, so as to have little time and energy left to attempt to alter the status quo in PoK or in Aksai Chin.

#### **Pakistan:**

- In Pakistan's case, the intensification in its terrorist activities is related in part to the dilution of Article 370 that it perceives as undercutting its claims on Kashmir.

#### **China:**

- China seems to have perceived that the division of Ladakh from Jammu and Kashmir, that delinks Ladakh from the Kashmir problem, allows India a freer hand in contesting China's claims in the region. Increasing road-building activity on India's part close to the LAC augments this perception.
- In addition to bordering on China's most restive provinces of Xinjiang and Tibet, Ladakh is contiguous to Pakistan-occupied Kashmir (PoK), Gilgit and Baltistan, where the Chinese have invested hugely under the China-Pakistan Economic Corridor (CPEC) project. When completed, the CPEC will connect Xinjiang with Gwadar port in Balochistan.
  - \* External Affairs Minister's remark on having physical jurisdiction over POK has alarmed China, which sees any such Indian move as threatening the CPEC project.

#### **Differing objectives:**

- There are major differences in Pakistani and Chinese objectives regarding India that are related to their divergent perceptions of their disputes, and their different force equations with India.

#### **China:**

- For China, Ladakh is primarily a territorial dispute with strategic ramifications.
- China also believes it is superior to the Indian militarily and, therefore, can afford to push India around within limits as it has been attempting to do in the recent confrontation.

#### **Pakistan:**

- For Pakistan, its territorial claim on Kashmir is based on an ideological conviction that Kashmir being a Muslim-majority state is destined to become a part of Pakistan.
- Pakistan, realizing that it is the weaker power in conventional terms, has resorted to using unconventional means, primarily terrorist infiltration.

#### **Conclusion:**

- Given that China's primary concern is the CPEC, it does not challenge the status quo in Kashmir. Pakistan, on the other hand, is committed to changing the status quo in Kashmir.
- Therefore, while it is possible to negotiate the territorial dispute with China on a give-and-take basis, this is not possible in the case of Pakistan.
- India should, therefore, distinguish the different objectives on the part of China and Pakistan and tailor its responses accordingly without conflating the two threats to its security. This would allow India to choose its policy options rationally.

### **Two-Front Conundrum**

#### **Context:**

- The article analyzes the threat of two-front war for India and examines the past precedents for India.

#### **Background:**

- Whenever India has forgotten that it has two geopolitical antagonists and let its guard down, it has paid dearly for it. Conversely, whenever India has accounted for the prospect of a possible threat from both quarters, it has done well. The two obvious examples are the 1962 and 1971 wars.

#### **1962 war:**

- In the India-China interactions leading up to the 1962 China-India war, India had demonstrated friendliness without reciprocity and firmness without force.

- In 1962, India's Prime Minister Jawaharlal Nehru and Defence Minister V.K. Krishna Menon had both believed that the threat to India's security came principally from Pakistan. Despite deteriorating India-China relations in the late-1950s, neither Nehru nor Krishna Menon had contemplated a war between the two countries. And there were no moves to prepare for such a scenario.
- Despite warnings from top military officers regarding the under preparedness of the Indian army, no steps were taken to strengthen it.
- Even despite the deterioration of ties before the 1962 war, there was this immutable belief in the top leadership that Pakistan was the threat, not China.
- India's complacency and misjudgment in 1962 were not for want of warning signs from China. Indian leaders had apparently convinced themselves that the Chinese would not attack.
- On October 20, 1962, the People's Liberation Army struck simultaneously, all along the India-China frontier, a move which highlighted the long preparation for the attack. The Chinese had overwhelmed the ill-prepared Indian forces.

1971 war:

- In 1971, Prime Minister Indira Gandhi took account of a possible Chinese move in support of Pakistan. India, therefore, took out an insurance policy in the form of the Treaty of Peace, Friendship and Cooperation between the Government of India and the Government of the Union of Soviet Socialist Republics.

#### Current situation:

- There has been an obsession concerning the threat from Pakistan, together with a degree of complacency vis-à-vis China, in part because the recent stand-offs in Depsang, Chumar, and Doklam were defused.
- The interactions between Prime Minister Narendra Modi and President Xi Jinping at Wuhan and Mamallapuram further blind-sided those involved in foreign and security policy planning in New Delhi regarding the current move by the Chinese.

China's strategic objectives:

- India seems to have failed to fully comprehend China's fundamental strategic objectives regarding India. These strategic goals include:
  - \* To drive home the point that India is not in the same league as China through localised assaults across the Line of Actual Control (LAC) when India tries to assume a position of equality.
  - \* Warning India not to actively oppose Chinese designs to dominate the Indo-Pacific region by aligning with the U.S. and its allies — Japan and Australia.

- \* To keep India preoccupied with problems in its immediate neighbourhood so that it cannot act as an alternative pole of power to China in the broader Asian region.
- \* Supporting Pakistan economically and militarily, including the sharing of nuclear weapons designs, to neutralise India's conventional power superiority vis-à-vis that country.

- China's aim, as in 1962, is not primarily to acquire territory, but the real aim seems to force on India a political settlement which will involve India re-orienting its policies to suit the pattern of Chinese global policies.

#### Conclusion:

Preparing for a two-front war:

- The mistake in 1962 is instructive today—an obsession about Pakistan and a degree of complacency about China. Although circumstances are different today from those in 1962, India continues to face the two-front conundrum.
- China is undoubtedly India's principal long-term adversary.
- India has to plan to cover all contingencies and remain alive to a "two-front" war.

Well planned policies:

- India must assess its options in a balanced way. While remaining clear-eyed about Chinese intentions, India needs a long-term vision, executed with patience and perseverance.
- An understanding of the Chinese objectives is essential to fashioning a realistic Indian response to China's aggressive policies in Ladakh and elsewhere along the LAC.
- India's main strategic goal should be the adoption of carefully calculated policies that neutralise China's diplomatic and military clout in the Asia-Pacific region without making India appear as a surrogate for other powers and without sacrificing India's autonomy of decision-making in foreign policy.

## **20. Importance of Air Power**

#### Context:

- The author of the article, Arjun Subramaniam, a retired Air Vice Marshal from the Indian Air Force argues for the acceptance of the importance of air power in what has been till now a significantly land-centric operational philosophy of India across the LAC.

#### Past precedents:

***Error of judgment:***

- In the 1962 war, there was minimal or no role for the Indian Air Force (IAF) despite the Chinese advances into Indian territories. Despite the possible positive impact that IAF could have resulted for India, the political leadership was against the use of air power against the Chinese. The Indian side faced a humiliating defeat from the Chinese.

***Acceptance of role of air power:***

- In 1986-1987, following the establishment of a camp at Wangdung grazing grounds in the Sumdorong Chu Valley (northwest of Tawang), India had employed an envelopment strategy that spooked the Chinese with numbers, firepower, and aggression without needless confrontation. An important element of this strategy was the use of helicopters and transport aircraft to facilitate and sustain this deployment.
- Unlike in 1962, India even developed an offensive strategy to take the battle to Le, the forward most PLA base in the sector. There was close coordination between the army and the IAF. There was emphasis on the role of air power and its utility for India.

***Comparison of air force capabilities:******The IAF's advantage:***

- Based on recent operational assessments, the IAF currently enjoys both a qualitative and quantitative advantage over the People's Liberation Army Air Force (PLAAF) across the LAC.
- IAF's fighter fleet of 4th Generation Aircraft (Su-30 MKIs, Mirage-2000s and MiG-29s) are superior in almost every respect to the PLAAF's J-10s, J-11s and SU-30 MKKs.
- The IAF has more operational bases than the PLAAF close to the LAC. There is the potential for higher survivability of IAF bases to withstand an initial attack by the PLA Rocket Force (PLARF).
- India enjoys a significant advantage in the aerial mobility department where the IAF transport fleet of C-17s, Il-76s, An-32s and C-130s are capable of diverse roles like rapid troop induction into major bases or at Advance Landing Grounds like DBO, Nyoma or Mechuka, or inter-valley transfer.
- The recently inducted Chinooks and the versatile Mi-17 series helicopters are capable of the insertion of Special Forces in difficult to reach areas. The recently inducted Apache Attack Helicopter, capable of operation at altitudes of 12,000-14,000 feet, would add significant firepower for the IAF.

***Challenges for IAF:***

- Despite the many advantages enjoyed by the IAF, there are, however some concerns too.

- China has a strong ground-based air defence network in Tibet comprising the S-300, S-400 and HQ-9 systems that the IAF will have to contest during its offensive operations.
- The PLAAF holds an advantageous position with respect to long-range air delivered cruise missiles (500-3,000 km) from the H-6 bomber. As compared to this, the IAF's Su-30 MKI has just been cleared to carry the BrahMos land attack cruise missile with a range of 300 km.
- China possesses the Yaogan series of low earth orbit surveillance satellites that offer it an advantageous position in the area of surveillance. India stands at a disadvantage with respect to surveillance capability.
  - \* India must leverage its existing space-based surveillance assets and airborne surveillance platforms to support wide-spectrum operations and provide better situational awareness.
- Given the thrust on modernization by the PLAAF and the IAF having to face deep budgetary cuts and the likelihood of the slowing down of the induction of cutting-edge platforms and weapon systems, in the next decade or so, the IAF may lose its competitive advantage against the PLAAF.

***Conclusion:***

- The ground situation across the entire Line of Actual Control (LAC) is largely one of parity and for any asymmetric advantage to be gained, it is air power that will prove to be decisive in depleting the PLA's combat potential.
- Air power represents a significant aspect of contemporary military power and India should take appropriate measures to strengthen its air force capabilities.

***21. In India's China policy, a mix of three approaches******Introduction***

Many countries are reconsidering their relationship with China — the United States (US) and the European Union, Australia and Canada, Indonesia and Japan, Brazil and Russia. Their policies have generally involved a combination of three approaches, often pursued simultaneously.

- The first is internal balancing, strengthening themselves and developing capabilities in response to China's growing power.
- The second is engagement, working with China to reach understandings, although this requires some give and take by both sides.
- The third is external balancing, cooperating with others to gain more leverage and security vis-à-vis Beijing.

Every country's debate about its China policy has essentially involved how much emphasis it can and should place on each approach.



**India's scepticism about China**

- It dates back to the late 1950s and especially the 1962 war.
- Despite a return to full diplomatic ties in the late 1970s, normalisation began with Rajiv Gandhi's 1988 visit to China and the agreements of 1993.
- Commercial normalisation was only evident after about 2003. But the scepticism never truly disappeared.

**The India-China relationship can be considered to have four main components**

- One, boundary dispute.
- Two, regional security competition in India's neighbourhood.
  - \* The Belt and Road Initiative (BRI) today leverages China's resources,
  - \* Nepal settling its border with China in the 1960s,
  - \* China's sharing of nuclear technology with Pakistan in the 1970s,
  - \* Bangladesh importing Chinese military hardware in the 1980s, and
  - \* Chinese backing for the military junta in Myanmar in the 1990s.
- Three, economic relations. It grew after 2003 but Indian enthusiasm waned as Chinese market access proved limited and the trade deficit widened.
- The fourth aspect was global governance cooperation.
  - \* China and India found common cause at BRICS,
  - \* Asian Infrastructure Investment Bank (AIIB), and the Shanghai Cooperation Organisation.
  - \* Beijing's emphasis on international coalition-building was eventually surpassed by its own superpower ambitions.

India consequently began balancing even as it normalised ties with Beijing.

- China was a major driver of the India-US civil nuclear agreement, which enabled defence and technological relationships with the US and its allies (including Europe, Japan and Australia).
- China's overt opposition to India's waiver at the Nuclear Suppliers Group in 2008 indicated its unease with that development.

**What approaches did India subsequently adopt?**

- First, efforts at internal balancing required a robust Indian economy, appropriate budgetary allocations for national security, and political will to deploy these tools.

\* However, the Indian economy did not perform as dynamically as many had hoped after 2011.

\* Nonetheless, India activated once-dormant airfields, raised army mountain divisions, reallocated air force assets eastwards, and began to improve border infrastructure.

- Second, Indian aid and concessional loans to the neighbours (especially Bangladesh, Sri Lanka, Nepal and the Maldives) increased and naval deployments in the Indian and western Pacific Oceans picked up by late 2017, although capital budgetary allocations did not keep pace.

\* India's willingness to intervene to support Bhutan against Chinese road-building in Doklam was an important statement of intent.

\* While these developments have been positive, it is debatable whether they have been sufficient given the widening resource gap with China.

- The latest period of engagement, which began in 2017, revealed that neither China nor India were able or willing to make major compromises.

\* India continued to reject both the BRI and the Regional Comprehensive Economic Partnership (RCEP).

\* The boundary question remained unanswered. Even on economic relations, China made only minor concessions on agricultural and pharmaceutical imports.

\* Even in the absence of real changes, the rhetoric of engagement made sense in the aftermath of the Doklam crisis only because it bought both countries time.

- Finally, external balancing involved a series of arrangements with partners that shared India's concerns about China, with the intention of improving interoperability, facilitating intelligence and assessments, and boosting each other's economic and defence capabilities.

\* In the past few years, India has made progress in facilitating logistics support, increasing maritime awareness, upgrading military exercises, and regularising strategic dialogues with the US, Japan, Australia, Russia, France, South Korea, Southeast Asia, and others.

\* June 2020's India-Australia "virtual summit" is the latest step in a larger progression.

**Conclusion**

- India is not alone in having a domestic debate about managing China's rise. A combination of approaches will remain in the policy mix of every country.

- But if one believes that India's internal balancing has been inadequate and engagement requires some genuine compromises by Beijing, New Delhi must logically accelerate its efforts at external balancing to deal with a more powerful China.

# ART AND CULTURE

## 1. Ashadhi Bij

- Ashadhi Bij/Beej is the 2nd day of Shukla paksha of Ashadha month of the Hindu calendar (June – July).
- The Kutchi people of Gujarat celebrate their Kutchi New Year on this day.
- This day is associated with the beginning of rains in Kutch, Gujarat.
- On this festival, the people check the moisture in the atmosphere to help predict which crop would do best in the coming monsoon.
  - \* Moisture in the air makes the seed and soil gain weight. If the pre-monsoon air has a lot of moisture in it, that is a fairly good indication that the season will be well.
- Kutch is largely a desert area, therefore people living there value rain very much.
- Ashadhi Beej is celebrated mainly at two places in India – Vishwanath temple in Varanasi, UP and Mulesh Mahadev in Umreth, Gujarat.

### Context:

- PM greets people on Ashadhi Bij, the Kutchi New Year.

## 2. Dnyaneshwar

- Also referred to as Jnaneshwar, Jnanadeva, Dnyandev or Mauli
- He was a 13th-century Indian Marathi saint, poet, philosopher and yogi of the Nath Vaishnava tradition.
- Dnyaneshwar's ideas reflect the non-dualistic Advaita Vedanta philosophy
- He authored Dnyaneshwari (a commentary on the Bhagavad Gita)
- He considers humility; non-injury in action, thought and words; forbearance in the face of adversity; dispassion towards sensory pleasures; purity of heart and mind; love of solitude and devotion towards one's Guru and God as virtues; and their corresponding moral opposites as vices.
- When it comes to the institution of caste, his approach becomes more humanitarian and he advocates spiritual egalitarianism.

### Pandharpur Wari

- It is an annual pilgrimage (yatra) to the town of Pandharpur, which is the seat of Hindu God Vithoba in Maharashtra
- Warkaris (or devotees undertaking the wari) carry palanquins bearing paduka (foot prints) of saints Dnyaneshwar and Tukaram and trek the 230-odd km from Alandi and Dehu in Pune to the shrine of Lord Vithoba in Pandharpur in Solapur district.

## 3. Kani Shawl

- A Kani shawl is a type of Kashmir shawl
- It is one of the oldest handicraft of Kashmir
- Kani shawl has a Geographical Indication tag
- This craft has been a part of the valley since the time of Mughals.
  - \* The Ain-i-Akbari records that Emperor Akbar was an avid collector of Kani shawls.
- 'Kani' comes from the area where this particular artisans come from, Kanihama, the word 'Kani' - in Kashmiri - also means a small wooden oblong spool.
- It is made from Pashmina on a handloom but instead of a shuttle used in a pashmina shawl, it is made using cane needles.

## 4. Raja Parba festival

- It is celebrated in Odisha. It is a unique festival celebrating the onset of monsoon and the earth's womanhood
- The term Raja has come from Rajaswala (meaning a menstruating woman) and during medieval period the festival became more popular as an agricultural holiday remarking the worship of Bhudevi, who is the wife of lord Jagannath.
  - \* Menstruation is considered as a sign of fertility, and therefore, it celebrates femininity and her ability to give birth to another life.
  - \* During the Parba, Odia people do not undertake any construction works or tilling that requires the earth to be dug. And by not doing such activities, they pay ode to the Mother Earth who needs a break from routine work.
- The festival concludes with a custom called Vasumati Snana or the bathing of Bhuma Devi. Women worship a stone that symbolises the Mother Earth.
  - \* As it is a celebration of womanhood, a lot of the focus is on young women, who wear new clothes, apply 'Alata' on their feet and enjoy folk songs while swinging on decorated rope swings.
- The festival falls in mid-June.
  - \* The first day is called Pahili Raja, second day is called Mithuna Sankranti, and the third day is Bhu daaha or Basi Raja.

### Context

- Prime Minister Narendra Modi greeted the people Of Odisha.

## 5. Talamaddale

### Context:

- The traditional art of 'talamaddale' has gone virtual in times of COVID-19.

### Details:

- Talamaddale is a variant and a derived form of Yakshagana theatre.
- "Tala" refers to a pair of small hand cymbals and a "Maddale" is a type of drum.
- Unlike the Yakshagana performance, in the conventional 'talamaddale', the artists sit across in a place without any costumes and engage in testing their oratory skills based on the episode chosen.
- If music is common for both Yakshagana performance and 'talamaddale', the latter has only spoken word without any dance or costumes. Hence, it is an art form minus dance, costumes and stage conventions.
- 'Arthadhari' in a talamaddale performance is an artist who is an orator.
- Artha vaibhava or the grandeur of dialogues tends to be a highlight of these performances relished by the audience.

### Yakshagana:

- Yakshagana is a traditional Indian theatre form.
- It is believed to be developed in Dakshina Kannada, Udupi, Uttara Kannada, Shimoga and western parts of Chikmagalur districts, in the state of Karnataka and in Kasaragod district in Kerala. This theatre style is mainly found in the coastal regions of Karnataka in various forms.
- Yakshagana combines dance, music, dialogue, costume, make-up, and stage techniques with a unique style and form.
- It is believed to have evolved from pre-classical music and theatre during the period of the Bhakti movement.
- Yakshagana is traditionally presented from dusk to dawn. Its stories are drawn from Ramayana, Mahabharata, Bhagavata and other epics from both Hindu and Jain and other ancient Indic traditions.

## 6. How archaeologists continued digging from home during lockdown

### Tamar Valley

- It is a rich archaeological landscape with many sites belonging to the Iron Age and Roman era.
- Tamar Valley – the border between Cornwall and Devon – and surrounding areas.

### Tamar River

- It is a river in south west England, that forms most of the border between Devon (to the east) and Cornwall (to the west).
- The area is a World Heritage Site due to its historic mining activities.

## **Saindhava**

- Saindhavas, also known as Jayadrathas, ruled western Saurashtra
- Their capital was at Bhutamabilika (now Ghumli) in Barda Hills.
- They flourished in 7th century AD
- Pushyadeva is the earliest known king mentioned in the grants found from Ghumli.

## **Navlakha Temple**

- It is a 12th Century temple built by Jethwa rulers at Ghumli
- It is dedicated to Sun god, Surya and is oldest sun temple of Gujarat
- It has the largest base (Ugati) of the temples in Gujarat
- The Navlakha Temple built at a cost of Nine Lacs hence the name Navlakha.
- The temple is built in Maru-Gurjara architecture (or the Solanki style).

## 7. Bimal Julka Committee

- The committee was appointed under Bimal Julka for rationalisation and professionalisation of institutes related to film activities

### Context:

- Expert Committee on Rationalization of Film Media Units and Review of Autonomous Bodies submit report

### Recommendation

- The committee has found overlapping activities undertaken by multiple institutes and has suggested an umbrella configuration with 4 broad verticals under which institutes should work viz. Production, Festival, Heritage and Knowledge.
- These verticals would be headed by professionals. The report recommends creation of Film Promotion Fund to fund independent filmmakers for making commercial films.

## 8. NAIMISHA 2020

### Context:

- National Gallery of Modern Art (NGMA), New Delhi has announced ONLINE NAIMISHA 2020- Summer Art Program

### Details

- During this pandemic situation and lockdown, museums and cultural institutions cannot serve visitors and audiences as usual.
- It led NGMA to explore new areas and platforms to reach to its audiences.
- NGMA had organised many programs and exhibitions virtually. The technological development provides an opportunity to organize such programs digitally.



- So, NGMA was making an endeavor to host its most popular summer art program NAIMISHA digitally.
- The month-long ONLINE summer program by NGMA, New Delhi was an initiative to provide a chance to its participants to create and learn from practicing artists without compromising their health
- In the online NAIMISH 2020 program, four workshops were organized which included Painting workshop, Sculpture workshop, Printmaking and Indrajaaal - The Magic of Art (Interdisciplinary creative workshop to understand Freedom)

#### **NGMA**

- It is run and administered as a subordinate office of the Ministry of Culture, Government of India; it has two branches - one at Mumbai and the other at Bengaluru.
- The gallery is a repository of the cultural ethos of the country and showcases the changing art forms through the passage of the last hundred and fifty years starting from about 1857 in the field of Visual and Plastic arts.

# SCIENCE AND TECHNOLOGY

## 1. Gold Nano Particles

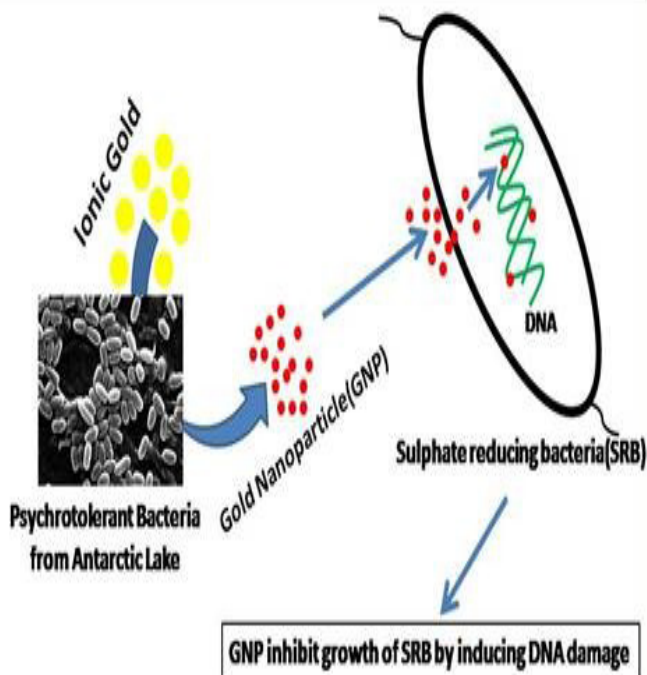
### Context

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

### Psychrophiles and Psychrotolerant Microorganisms

- Microorganisms with an optimum growth temperature of  $\leq 15^{\circ}\text{C}$  that do not grow above  $20^{\circ}\text{C}$  are termed psychrophiles.
- Psychrotolerant microorganisms have an optimum temperature between  $20^{\circ}\text{C}$  and  $40^{\circ}\text{C}$ , but are also capable of growth at  $0^{\circ}\text{C}$ .

*Psychrotolerant Antarctic bacteria biosynthesize gold nanoparticles active against sulphate reducing bacteria*



### Genotoxicity

- It describes the property of a chemical agent that is capable of damaging the genetic information of DNA and thus causing mutation of the cell, which can lead to cancer.

### What did the study reveal?

- The NCPOR-GU study revealed genotoxic effect of GNPs on a Sulphate Reducing Bacteria (SRB).

- The GNPs displayed enough anti-bacterial properties by inhibiting the growth of SRB and its sulphide production by damaging the genetic information of the DNA of the bacterial cell.

### Application

- These GNPs can be used as a composite therapeutic agent clinical trials, especially in anti-cancer, anti-viral, anti-diabetic, and cholesterol-lowering drugs.
- Use of psychrotolerant Antarctic bacteria is found to have special advantages like mild reaction condition to reduce gold ion to Gold Nanoparticles (GNPs) with a good dispersion capability.

### What is nanotechnology and Nano Particle (NP)?

#### Nanotechnology

- It is a technology that creates new and novel materials through controlled manipulation at a size range of 1 nm (nanometer) to 100 nm (1 nm equals to  $10^{-9}$  m).

#### NPs

- They are those materials that are at least one dimension smaller than 100 nanometres.
- NPs have a high surface-to-volume ratio and they can provide tremendous driving force for diffusion, especially at elevated temperatures.
- Sintering, i.e., coalescing into solid or porous mass by means of heating without liquefaction, can occur at lower temperatures at shorter time scales than larger particles.
- \* NPs have been found to impart various desirable properties to different day-to-day products.

#### Gold Nano Particles (GNPs):

- They are small gold particles with a diameter of 1 to 100 nm which, once dispersed in water, are also known as colloidal gold.
- GNPs are found to have greater solar radiation absorbing ability than the conventional bulk gold, which makes them a better candidate for use in the photovoltaic cell manufacturing industry.
- GNPs have unique optical properties too. For example, particles above 100 nm show blue or violet colour in water, while the colour becomes wine red in 100 nm gold colloidal particles. They can thus be used in therapeutic imaging.
- GNPs also have unique physicochemical properties. Their biocompatibility, high surface area, stability, and nontoxicity make them suitable for various applications in therapeutic use including detection and diagnosis of diseases, bio-labelling, and targeted drug delivery.

- As nano-carriers, GNPs are capable of transferring various drugs made out of peptides, proteins, plasmid DNAs, small interfering RNAs, and chemotherapeutic agents to target diseased cells of the human body.

## 2. **‘IN-SPACe will be space industry regulator’**

### **Context**

- Indian Space Promotion and Authorisation Centre (IN-SPACe), a new entity of the Department of Space, has been approved by the Union Cabinet.

### **Functions of IN-SPACe:**

- IN-SPACe will regulate and promote building of routine satellites, rockets and commercial launch services through Indian industry and start-ups.
  - \* These activities had been largely the domain of the 50-year-old Indian Space Research Organisation (ISRO) until now.
- It will have its own chairperson and board.
- IN-SPACe will have its own directorates for technical, legal, safety and security, monitoring and activities promotion.
- It is the second commercial arm of the Department of Space. (First being Antrix Corporation Limited)
- It will function autonomously and parallel to ISRO.
- NSIL [New Space India Ltd], which was launched in 2019, will be strengthened and empowered to work with IN-SPACe and enable industry consortia to take on some of the activities of ISRO.
  - \* These include launch vehicles and satellite production, launch services and space-based services.

### **Significance:**

- IN-SPACe is touted as the body that will ensure a level playing field for Indian industry in a fast-growing global space sector.
- Private companies will be provided level playing field in satellites, launches and space-based services. Future projects for planetary exploration, outer space travel will be open for the private sector.
- The reforms in the space sector are aimed at tapping the potential of the entire country for unlocking its potential by enabling private enterprises and start-ups to undertake end-to-end space activities.
- They are also aimed at mitigating the large investments required to set up facilities for undertaking space activities through sharing of such existing facilities under ISRO.
- It is expected that a large number of jobs will be created.
- According to the ISRO Chairman, this [restructuring] will allow ISRO to allocate more time and resources for R&D endeavours while it continues to carry out its present activities with greater emphasis on development of advanced technology, human space flight missions and capacity building besides supporting private endeavours in the space sector.

### **New Satellite Navigation policy:**

- A new satellite navigation policy, which has a strategic military element to it, is being proposed.
- The older ones, namely Remote Sensing Data Policy and the SatCom Policy of 2000, are being revised.
- These are apart from a proposed policy for space activities that has seen a draft.

## 3. **miR-155**

### **Context**

- Researchers at the Indian Institute of Technology Madras have identified a specific microRNA (miRNAs) called ‘miR-155’ that is over-expressed in tongue cancer.

### **The research team has shown that knocking out miR-155 causes**

- Death of cancer cells
- The cell cycle
- Regresses tumour size in animal models and
- Reduces cell viability and colony formation in bench top assays.

### **Significance**

- The finding could help develop molecular strategies to manipulate miR-155 expression to develop therapeutics for tongue cancer.

### **miRNAs**

- The miRNAs affect cancer growth through inhibiting or enhancing the functions of certain proteins.
- MicroRNAs (miRNAs) are short noncoding RNAs containing 20–24 nucleotides that participate in virtually all biological pathways in animals.
- They have been found to play important roles in many cancers, in carcinogenesis (start of cancer), malignant transformation and metastasis — the development of secondary cancer.
- The miRNAs associated with cancer are called ‘Oncomirs’.
  - \* Many of the Oncomirs affect cancer by suppressing the performance of tumour-suppressing agents.
  - \* Some of them can prevent the growth and spread of cancer cells and yet others prevent tumour growth itself.
- miRNA manipulation is being combined with conventional cancer treatment methods such as chemotherapy, radiotherapy and immunotherapy.

## 4. **Nature Index**

- The Nature Index is a database of author affiliation information collated from research articles published in an independently selected group of 82 high-quality science journals.
- The database is compiled by Nature Research (journal).

- The Nature Index provides a close to real-time proxy of high-quality research output and collaboration at the institutional, national and regional level.
- The Nature Index also provides institutions with an easy means to identify and highlight some of their best scientific research.
- The Nature Index is updated monthly
- The Nature Index functions as an indicator of high quality research in the Natural and Physical Sciences (includes Chemistry, Life Sciences, Earth & Environmental Sciences)

#### Context

- Three of the autonomous institutions of the Department of Science & Technology, Government of India have found their place among top 30 Indian Institutions including universities, IITs, IISERs, and Research Institutions and Labs as per Nature Index 2020 ratings based on the research published in the top journals

### **5. Product Application and Development Centre (PADC)**

#### Context

- PADC setup by Indian Oil at Paradip, Odisha inaugurated.

#### Details

- There are 4 laboratories in PADC namely Polymer Processing Lab, Analytical Testing Lab, Chemical Analysis Lab and Characterisation Lab.
- PADC, Paradip is recognized as a research centre by the Department of Scientific and Industrial Research (DSIR), Ministry of Science & Technology, Govt of India.
- The centre will render assistance to customers and investors in product and application development for polymer finished products such as molded furniture, houseware, woven sacks for packaging cement, fertiliser, healthcare applications like baby diaper, personal protective suit, mask, etc.
  - \* The centre will carry out testing and developmental activities for investors of Paradeep Plastic Park and other clusters like Balasore and Khurda.
  - \* The centre will impart requisite product and process training to the prospective and budding investors including hand holding activities for plant set-up, selection of machinery and material.

#### Significance

- PADC will act as an incubation centre for new entrepreneur development in and around Odisha in the field of plastics.
- PADC will provide quality assurance, complaint handling, customer support, benchmarking studies, new & niche grade development and application development activities.

### **6. Science, Technology and Innovation Policy (STIP) 2020**

#### Context

- The Office of the Principal Scientific Adviser to the Government of India (Office of PSA) and the Department of Science and Technology (DST) have started a consultative process for the formulation of a new National Science Technology and Innovation Policy (STIP 2020) reaching out to a wide range of stakeholders.
- The fifth S&T policy of the country is being formulated at a crucial juncture when India and the world are tackling the COVID-19 pandemic.

#### Details

The STIP 2020 formulation process is organised into 4 highly interlinked tracks, which will reach out to a large number of stakeholders for consultation in the policy formulation.

- Track I involves an extensive public and expert consultation process through Science Policy Forum – a dedicated platform for soliciting inputs from larger public and expert pool during and after the policy drafting process.
- Track II comprises experts-driven thematic consultations to feed evidence-informed recommendations into the policy drafting process.
  - \* Twenty-one (21) focused thematic groups have been constituted for this purpose.
- Track III involves consultations with Ministries and States.
  - \* For track III, nodal officers are being nominated in states and in ministries, departments and agencies of the Government of India for extensive intra-state and intra-department consultation.
- Track IV constitutes apex level multi-stakeholder consultation.
  - \* For track IV, consultation with industry bodies, global partners and inter-ministerial and inter-state consultations represented at the highest levels are being carried out.

### **7. SpaceX's spacecraft successfully docks with ISS**

#### Context

- Two American astronauts flew to the International Space Station

#### SpaceX built Crew Dragon

- It is a company founded by billionaire entrepreneur Elon Musk who also heads Tesla Motors
- The rocket, named Falcon 9 carried the spaceship into the orbit
- The event generated tremendous excitement around the globe, not because of any special technological achievement but because of the agency that facilitated the trip



- With the liftoff, SpaceX became the first private company to launch people into the orbit, a feat achieved previously by only three governments: the U.S., Russia and China.

#### Significance

- The launch also represents the first time NASA has launched its own astronauts since the end of the space shuttle program nearly a decade ago.
- The event is being widely seen as the beginning of a new era in space exploration.

### **8. Tracking Google**

#### Context

- Google was sued in a proposed class action accusing the internet search company of illegally invading the privacy of millions of users by pervasively tracking their internet use through browsers set in "private" mode.

#### Details

- The lawsuit seeks at least \$5 billion, accusing the Alphabet Inc unit of secretly collecting information about what people view online and where they browse, despite their using what Google calls Incognito mode.
- Google gathers data through Google Analytics, Google Ad Manager and other applications and website plug-ins, including smartphone apps
- This helps Google learn about users' friends, hobbies, favorite foods, shopping habits, and even the "most intimate and potentially embarrassing things" they search for online.
- They say that users not only don't know that Google is collecting information even when they are in a private view mode but also have no means to avoid its scrutiny.

#### Federal Wiretap Act

- It disallows any intentional interception of any wire, oral, or electronic communication.
- The petitioners have invoked this Act, saying the following: "Google's actions in intercepting and tracking user communications while they were browsing the internet using a browser while in 'private browsing mode' was intentional.
- They have also contended that the acts of Google violate the California Invasion of Privacy Act, which prohibits intentional tapping of communication.

#### Arizona v. Google case

- The allegation was one of privacy violation by Google, the specific charge being that the company was tracking user location even when the user had turned off location tracking.

#### Has Google been sued in the past for wiretapping law violations?

- Yes. One of the long-running cases ended last year when Google agreed to a \$13 million settlement. The allegation was its "Street View mapping project captured data from private Wi-Fi networks,"
  - \* Later, media reports suggested that some nine States were against this settlement as it contributed to massive privacy violation.
- In 2016, it reportedly settled a case where it was accused of "covertly scanning Gmail messages for advertising revenues". It was reported then that it had agreed to stop the practice.

# SECURITY AND DEFENCE

## 1. Drones

### Context:

- The Ministry of Civil Aviation notified the draft rules, known as Unmanned Aircraft System Rules, 2020.
- The rules are meant for importing, manufacturing and owning drones as well as for drone ports, or airports for drones.

### Details

- Anyone in the business — manufacturer, importer, trader, owner or operator — must take approval from the Directorate General of Civil Aviation (DGCA).
- An importer or manufacturer can sell drones only to an authorised trader or owner.
- The DGCA will have the powers to inspect a manufacturing or maintenance facility before granting any authorisation.
- No UAS should carry any payload except as permitted by the DGCA.
- Licenses will have to be obtained for operations.

### Licensing criteria

- For owning and using a drone, one has to be at least 18 years old.
- In the case of companies, the requirement is that their main place of business has to be in India and the chairman and at least two thirds of directors have to be Indian citizens.
- Also, businesses operating drones have to be substantially owned and effectively controlled by Indian nationals.

### Third Party Insurance

- No UAS shall operate in India unless there is in existence a valid third party insurance policy to cover the liability that may arise on account of a mishap involving such UAS.

## 2. Lone Wolf Threat

### Definition

- A person who acts on his or her own without orders from — or even connections to — an organisation.
  - \* He does not receive orders, direction, or material support from an outside person, group or network.
- The attacker can use vehicles to run over people, launch knife attacks or use guns to kill people.
- Other terms that have been used to describe similar or comparable forms of political violence include “leaderless resistance” and “freelance terrorism”

### Difference between sleeper cell and Lone Wolf

- A Sleeper Cell is an operative who infiltrates the targeted society or organisation and then remains dormant until a group or organisation orders them into action.
- In contrast, “a lone wolf is a standalone operative who by his very nature is embedded in the targeted society and is capable of self-activation at any time”.

### Agenda

- These acts are politically or religiously motivated and aim to influence public opinion or political decision-making.
  - \* Attacks may also result from their larger disillusionment or anger with society
  - \* 1. Lone wolves tend to strike at a place associated with their personal frustration, like a school, college, or a mall.
- There is a wide variety in target selection, use of weapons and modus operandi. Lone wolf attacks range from threatening and intimidating people to shootings and bombings. As a consequence, there is much variety in the profile of an attack, its lethality and impact.

### Concerns

- First of all, they are solitary actors, whose intentions are hard to discern since they avoid contact with others
- Secondly, it is very hard to predict from which disenfranchised, alienated or frustrated environment they stem. They display a variety of backgrounds with a wide spectrum of ideologies and motivations.
- Thirdly, it is extremely difficult to differentiate between those extremists who intend to commit attacks and those who simply express radical beliefs or issue hollow threats
- Lastly, lone wolves inspire copycat behaviour, become role models for other alienated youngsters
- Compared to group terrorism or network-sponsored terrorists, lone operators have a critical advantage in avoiding identification and detection before and after their attacks, since most of them do not communicate with others with regard to their intentions.

### Challenges for the Lone Wolf

- Fortunately, there are also some operational constraints for the lone wolf, in executing a “successful” attack. Like any terrorist, they are hindered by the terrorist attack cycle. And because they are working alone, they have to conduct each step of the cycle by themselves.

- \* This means they are vulnerable to detection at several different junctures as they plan their attacks.

- In addition, these individuals often lack the knowledge, resources and contacts to skill themselves in preparing and executing violent acts.

#### How do we overcome this?

- It could be rewarding to study and compare the nature of potential triggers or catalyst events in the radicalisation processes of lone wolves
- Lone wolves – although operating alone – draw inspiration from other extremists or ideologues, counter narratives are important elements of such a strategy.

#### Conclusion

- The government and the security agencies need to adopt a multi-pronged approach towards radicalization, which is anchored in human intelligence, strong ties with communities and community leaders and deradicalisation programmes.

#### Context:

- The knife attack at a park in Reading, a town west of London, which killed three people and injured three others.

### **3. Maareech- Advanced Torpedo Defence System (ATDS)**

- It is a torpedo detection and countermeasure system that offers a complete solution to detect and locate an incoming torpedo and to apply countermeasures to protect naval platform against torpedo attack.
  - \* It is an advanced anti-torpedo decoy system that is capable of being fired from all frontline ships.
- It has been designed and developed indigenously by the DRDO and it is capable of detecting, locating and neutralizing incoming torpedo.

#### How does it work?

- The anti-torpedo system, which is equipped with sonars and towed and expendable decoys, is capable of detecting, confusing, diverting and decoying the incoming torpedoes.
- The decoy helps in exhausting the energy of the torpedo by running the later through long and ineffective course and prevents them from homing in to the targeted platform with its advanced counter-measure capabilities.
- Bharat Electronics Limited, a defence PSU, would undertake the production of this decoy system

#### Significance

- This induction not only stands testimony to the joint resolve of the Indian Navy and DRDO towards indigenous development of defence technology, but has also given a major fillip to the government's 'Make in India' initiative and the country's resolve to become 'atmanirbhar' (self-reliant) in niche technology

### **4. Swiss cheese and defence reforms**

#### Swiss Cheese Model

- The Swiss cheese model of accident causation is a model used in risk analysis and risk management, associated with accident investigation in an organisation or a system.
  - \* includes aviation safety, engineering, healthcare, emergency service organizations, and as the principle behind layered security, as used in computer security and defense in depth.
- It likens human systems to multiple slices of Swiss cheese, stacked side by side, in which the risk of a threat becoming a reality is mitigated by the differing layers and types of defenses which are "layered" behind each other.
- Therefore, in theory, lapses and weaknesses in one defense do not allow a risk to materialize, since other defenses also exist, to prevent a single point of failure.

#### Security Flaws

- The Swiss Cheese Model of accident causation illustrates that, although many layers of defense lie between hazards and accidents, there are flaws in each layer that, if aligned, can allow the accident to occur.

#### Three slices in defence set-up

In the Indian defence set-up, the three slices are:

- One, the policymaking apparatus comprising the Department of Military Affairs (DMA) and the Ministry of Defence (MoD);
- Two, the defence research and development (R&D) establishment and domestic manufacturing industry; and
- Three, the three services.

When the MoD alone existed, the holes in the three slices were aligned to different degrees resulting in four major wars since independence and hence, the system required an overhaul.

Defence today is not only about number of soldiers, it is also about technology. The advent of smart munitions, computer processing, networking capabilities and the skyrocketing cost of equipment brought in the concept of parallel warfare. This requires:

- Synergized and coordinated application of tools of national power.
- Joint operations of military to achieve economic and political gains.
- The setting up of the DMA and the creation of the post of Chief of Defence Staff (CDS) to achieve synergy are the most fundamental changes;

- \* Further modifications and tweaking is imperative, but that transformation has to be based on clinical analysis, without any external, emotional, political or rhetorical pressure.

#### **Access to the right equipment**

- India has adversaries on its borders. The issue of terrorist infiltration has not stopped in Jammu and Kashmir.
- China is flexing its muscles in Ladakh and the China-Pakistan nexus can only be expected to get stronger.
- Such a security environment demands that capability accretion of the three services proceed unhindered.
- To elaborate,
  - \* the Indian Air Force at a minimum requires 300 fighters to bolster its squadron strength;
  - \* The Army needs guns of all types;
  - \* The Navy wants ships, helicopters, etc.

#### **Issues with arms procurement**

- The requirements are worth billions of dollars but with COVID-19-induced cuts in defence spending, and their diversion to the social sector, getting all of them in the present environment is doubtful.
- Then comes the Govt. policy of self-reliance which aims at buying indigenous equipment, but for that, in-house R&D and manufacturing entities have to be ready to supply, which they are not capable of presently.
  - \* Hindustan Aeronautics Limited can, at best, produce just eight Tejas fighters per year presently;
  - \* The Army has had to import rifles due to the failure of DRDO to produce them;
  - \* The Navy has earnest hopes that the hull designs that its internal R&D makes get the vital innards for going to war.

So, the Swiss cheese slice representing indigenous R&D and a manufacturing supply chain that ensures quality war-fighting equipment, at the right time and in required quantities, is still some years away. Wars cannot be fought and won on well-meaning policy intentions; wars are won when war fighters have access to the right equipment to prosecute them.

#### **Creating theatre commands**

- The Govt. also plans to create theatre commands.
  - \* A theatre command is a military structure wherein all the assets of the army, air force and navy in a particular theatre of war are under the operational control of a three-star general. Currently, existing commands are of the army, navy and air force.
- This move brings changes to DMA and MoD. It modifies the very foundation of our war-fighting structure of the services. The CDS has set a deadline to bring this into action.

- But examples show this could be tough to achieve.
  - \* The Chinese announced their 'theaterisation' concept in 2015; it is still a work in progress.
  - \* The U.S. had a bruising debate for decades before the Goldwater-Nichols Act came into force in 1986.
- New relationships take time to smooth out, and in the arena of defence policymaking, which is where the DMA and MoD lie, the element of time has a value of its own: any ramming through, just to meet a publicly declared timeline, could result in creating a not-so-optimal war-fighting organisation to our detriment.

#### **Conclusion**

- The political, civil and military leadership must have their feet firmly on ground; impractical timelines and pressures of public pronouncements must not be the drivers in such a fundamental overhaul of our defence apparatus.
- To paraphrase Deng Xiaoping, we should shun publicity and build on our capability first.

### **5. YouTube accounts hacked**

#### **Context:**

- There has been a steep upsurge in the demand for access to hacked YouTube accounts on the dark web.

#### **Stats:**

- As of December 2019, India had more than 265 million users who had their own YouTube accounts, showcasing a wide range of content.
- India has been emerging as one of the biggest markets for the video-hosting website.

#### **Issue Area:**

- YouTube accounts are being hacked and auctioned on the dark web. Once acquired by the highest bidder, the same accounts are then used to hold the original owners to ransom.
  - \* Hackers are cashing in on the fact that YouTube accounts get monetized after hitting a certain number of followers.
- A major concern has been the fact that the hacking process in itself is simple.
  - \* Hackers send out thousands of malware embedded in phishing emails every day seeking access to YouTube accounts. All the victims have to do is to click a link in an unverified email and malware, which are specifically designed to look for YouTube login details, will sniff them out and convey them to the hackers.
- The trend is being tracked closely by Indian cybercrime agencies, at both State and Central level.



**Way forward:**

- It is recommended to follow strict cybersecurity practices like two-factor authentications that are not dependent on text messages and not using the same username and password combination on different platforms and accounts.

**Hackers get data of 80,000 COVID-19 patients in Delhi****Context:**

- Hacking of the Delhi government's State Health Mission website.

**Details:**

- Recently, the website of the Delhi State Health Mission (dshm.delhi.gov.in) was taken down temporarily by a group of hackers.
- The group has claimed that it merely wanted to highlight the vulnerability of the data system and express its dissatisfaction with the government's approach towards healthcare personnel.

**Concerns:**

- Data of more than 80,000 corona positive patients in Delhi, recovered and active, could potentially be at risk as a result of the hacking. This could lead to privacy concerns for the patients.
- The hacking incident has brought to light the fact that sensitive data was stored in the servers without sufficient security.
- Given that the server is used by the Delhi government to investigate, report, and track the COVID-19 situation in Delhi, and the fact that a hacker can edit, manipulate as well as misuse these data to make profits, there are dire consequences to the entire Indian security. For instance, manipulating these data will cause miscalculations and inaccuracy in tracking COVID-19.

**6. Hardship may push people into making drugs for a living: UNODC****Context:**

- The 2020 World Drug Report of the United Nations Office on Drugs and Crime (UNODC).

**Details:**

- Report analyzes the wide range of possible consequences of the COVID-19 pandemic on illegal drug production, supply and consumption.
- The measures taken by governments to counter the pandemic inevitably had double-edged consequences on large-scale drug supply.

**Positives:**

- The lockdown could hinder the production and sale of opiates in major producing countries.
  - \* The key months for the opium harvest in Afghanistan are March to June and given the fact that 2020's harvest took place during the pandemic would have lead to major reduction in production and supply.

- Some countries, such as Italy, the Niger and countries in Central Asia, have experienced a sharp decrease in drug seizures, amid reports that drug traffickers have diverted their attention to other illegal activities, including cybercrime and trafficking in falsified medicines.
- Other countries, including Morocco and Iran, have reported huge drug seizures, indicating large-scale drug trafficking, while some have reported an increase in interdiction resulting from increased controls.

**Concerns:**

- The report expresses concern over the adverse impact of the economic hardship caused by the pandemic. This could lead to an increase in the number of people resorting to illicit activities linked to drugs to make a living.
  - \* The 2008 economic crisis resulted in reductions in drug-related budgets of the governments and there was an overall increase in drug use, with a shift towards cheaper and more harmful drugs.

**Conclusion:**

- The COVID-19 pandemic has had an impact on illegal drug production, supply and consumption and there have been reports on change in strategy of the drug trafficking organisations.
  - \* The recent uptick in heroin seizures in the Indian Ocean could be interpreted as an indication of an increase in the use of maritime routes for trafficking heroin to Europe along the 'southern route'. This could indicate a change in the strategy of drug trafficking organisations as a result of the COVID-19 measures.
- Appropriate corrections in government policies are necessary to counter the threat posed by drug trafficking.

**Increased usage:**

- The report notes that about 26.9 crore people used drugs in 2018, which is 30% more than the 2009 figure, with adolescents and young adults accounting for the largest share of users.
- Compared with earlier estimates from a survey done in 2004, overall opioid use in India is estimated to have increased fivefold.
- The stimulant scene is dominated by cocaine and methamphetamine, and the use of both substances is rising in their main markets. Production of heroin and cocaine remains among the highest levels recorded in modern times.

**Expanding markets:**

- Rapid market changes are being noticed, with synthetics replacing opiates in Central Asia and the Russian Federation.
  - \* Crystalline meth market has also grown in opiate dominated areas like Afghanistan and Iraq.

- A number of indicators suggest that the global market of amphetamines, particularly methamphetamine, is expanding. Traffickers and manufacturers have been using “designer chemicals” as an alternative to synthesise amphetamine, meth and ecstasy.

#### **Lack of control:**

- The report expressed concern about fewer countries taking part in joint drug operations, apparently due to budgetary problems.

### **7. ‘India, China nuclear arsenals grow’**

#### **Context:**

- According to the latest report by Swedish think tank Stockholm International Peace Research Institute (SIPRI) India and China have increased their nuclear arsenal over the last year and the other nuclear countries are improvising on their existing arsenal.

#### **Stats**

- China’s nuclear arsenal has gone up from 290 warheads in 2019 to 320 in 2020, while India’s went up from 130-140 in 2019 to 150 in 2020.
- Pakistan’s arsenal was estimated to be between 150-160 in 2019 and has reached 160 in 2020.
- Both China and Pakistan continue to have larger nuclear arsenals than India
  - \* China is also in the middle of a significant modernization of its nuclear arsenal.
  - \* It is developing a so-called nuclear triad for the first time, made up of new land- and sea-based missiles and nuclear-capable aircraft.

#### **Globally**

- The nuclear arsenals of the nuclear-armed states other than the United States and Russia are considerably smaller
- Together the nine nuclear-armed states — the U.S., Russia, the United Kingdom, France, China, India, Pakistan, Israel and North Korea — possessed an estimated 13,400 nuclear weapons at the start of 2020, which marked a decrease from an estimated 13,865 nuclear weapons at the beginning of 2019.
- The decrease in the overall numbers was largely due to the dismantlement of old nuclear weapons by Russia and the U.S., which together possess over 90% of the global nuclear weapons.

#### **Concerns**

- The availability of reliable information on the status of the nuclear arsenals and capabilities of the nuclear-armed states varied considerably.
  - \* The U.S. had disclosed important information about its stockpile and nuclear capabilities, but in 2019, the administration ended the practice of publicly disclosing the size of its stockpile
  - \* Israel has a long-standing policy of not commenting on its nuclear capabilities (or whether it possesses them) while

- \* North Korea has publicly acknowledged testing but avoided providing details on the size and scope of its inventory.

- Russia and the U.S. have already announced extensive plans to replace and modernise their nuclear warheads and delivery systems
- This may impact global peace and destabilize the global politics leading to a trend of increased nuclear weapons

### **8. Police claim inroads into Maoist stronghold of Swabhiman Anchal**

#### **Context:**

- Two pronged strategy against left wing extremism in Odisha.

#### **Background:**

- Swabhiman Anchal, formerly known as Cut-off area, in Malkangiri district has been a Maoist stronghold.
- The area which was covered by water from three sides and inhospitable terrain by another had long been a stronghold of naxalites. The Maoists from Odisha, Andhra Pradesh and Chhattisgarh used to slip into Swabhiman Anchal to take refuge. The State police would avoid venturing into the area. Details:

#### **Details:**

##### **1. Security aspect:**

- The Odisha police has been strengthening security infrastructure in the area.
  - \* A police station has been set up in the area to provide service to the people of five gram panchayats of the region.
  - \* The establishment of Company Operating Base (COB) in the region has plugged the security vacuum in the area.

##### **2. Development aspect:**

- The strengthened security aspect will help facilitate uninterrupted developmental activities in the area.
- Development activities have picked up due to strengthening of the security network in the area. Roads are being constructed. After the construction of roads, auto-rickshaws and other mode of public transport have started plying.
- These roads have not only helped in improving public transport but have also encouraged other development activities. Trucks and tractors are reaching interior places now. Heavy duty machines can also be taken into remote pockets. Ambulances have been able to cater to emergency medical needs.

# ENVIRONMENT AND ECOLOGY

## 1. Aerosol characterization and radiative effects at High Altitude site in Western-Trans Himalayas

### Context:

- Researchers at the Aryabhata Research Institute of Observational Sciences (ARIES), Nainital an autonomous research institute under the Department of Science and Technology (DST) Govt. of India have found that Aerosol Radiative Forcing larger than the global averages, implying some amount of radiative effects, in spite of the clean atmosphere over the trans-Himalayas.

### Aerosol Radiative Forcing

- It is defined as the effect of anthropogenic aerosols on the radiative fluxes at the top of the atmosphere (TOA) and at the surface and on the absorption of radiation within the atmosphere.
- The effect of the total (anthropogenic + natural) aerosols is called Aerosol Radiative Effect or Total Aerosol Forcing.

### Observations of the scientists

- It shows that the Aerosol Optical Depth (AOD) exhibited a distinct seasonal variation with higher values (0.07) in May and lower (0.03) in winter months.
  - \* Aerosol optical depth is a measure of the extinction of the solar beam by dust and haze. In other words, particles in the atmosphere (dust, smoke, pollution) can block sunlight by absorbing or by scattering light.
  - \* AOD tells us how much direct sunlight is prevented from reaching the ground by these aerosol particles.
- The lower values of Ångström Exponent (AE) in spring indicated dominance of coarse-mode dust aerosols.

### Importance of Aerosol Study

- The atmospheric aerosols play a key role in the regional/global climate system through scattering and absorption of incoming solar radiation and by modifying the cloud microphysics.
- Despite the large progress in quantifying the impact of different aerosols on radiative forcing, it still remains one of the major uncertainties in the climate change assessment.
- Precise measurements of aerosol properties are required to reduce the uncertainties, especially over the oceans and high altitude remote location in the Himalayas where they are scarce.
- A deep scientific study of aerosol generation, transport, and its properties have important implications in our understanding and mitigation of climate change via atmospheric warming, which among many things, impacts the snow and glacier dynamics over the trans-Himalayan region

- The results from the study can help better understanding the aerosol optical and microphysical properties and improving the modeling of aerosol effects in view of aerosol-climate implications via modifications in atmospheric warming and changes in the snow/glacier albedo over the trans-Himalayan region.

## 2. Coccolithophores

- Coccolithophores are single-celled algae living in the upper layers of the world's oceans.
- They have been playing a key role in marine ecosystems and the global carbon cycle for millions of years.
- Coccolithophores calcify marine phytoplankton that produces up to 40% of open ocean calcium carbonate and responsible for 20% of the global net marine primary productivity.
- Coccolithophores build exoskeletons from individual  $\text{CaCO}_3$  plates consisting of chalk and seashells building the tiny plates on their exterior.
- Though carbon dioxide is produced during the formation of these plates, coccolithophores help in removing it from the atmosphere and ocean by consuming it during photosynthesis.
- At equilibrium, coccolithophores absorb more carbon dioxide than they produce, which is beneficial for the ocean ecosystem.

### Context:

- A study of a microscopic ancient marine algae (Coccolithophores) led by the National Centre for Polar and Ocean Research (NCPOR) has found that there is a decrease in the concentration of oceanic Calcium Carbonate ( $\text{CaCO}_3$ ) in the Southern Indian Ocean.

### Research team's analysis

- Decrease in  $\text{CaCO}_3$  is attributed to the increase in the concentration of another single-celled algae known as diatoms.
  - \* It revealed that the reduction of coccolithophore diversity in the early summer and late summer periods is due to an increase in the presence of diatom algae, which occurs after sea ice breakdown with climate change and ocean acidification, and increases the silicate concentration in the waters of the Southern Ocean.

### Impact

- The results of the study point to climate change as a major reason for the altered coccolithophore calcification rate.

- \* It o Calcification is the process by which corals produce calcium carbonate
- It will affect the growth and skeleton structure of coccolithophores, with potential significance for the world ocean ecosystem.

### **Conclusion**

- Different environmental factors and the ability of the species to adapt to those environmental changes would ultimately determine the future coccolithophore calcite production.
- These investigations are important for future intervention to bring positive changes in the marine ecosystem and global carbon cycle.

### **3. 'Draft EIA notification fosters non-transparency, encourages environmental violations'**

#### **Background**

- The Govt has released the Draft Environmental Impact Assessment (EIA) Notification, 2020 which if put into force will replace the EIA Notification of 2006 for all future projects.
- The Central Government issued this notification by exercising its power conferred to it by the Environment (Protection) Act, 1986.

#### **South Asia Network on Dams River and People (SANDRP)**

- SANDRP is an informal network of organisations and individuals working on issues related with water sector with special focus on issues associated with large dams, mostly in India but including South Asia regional issues.
- SANDRP's broad objective is to work on these issues so that democracy, people and environment get due place.
- Started in 1998 SANDRP's activities include monitoring, research, documentation, networking and awareness building among organisations and people related to these issues.

#### **Context:**

- According to SANDRP, in the name of streamlining the EIA process the draft notification issued by the Ministry of Environment dilutes the EIA process and encourages environment violations in case of big irrigation projects, shrinks its scope and removes stringent rules present in 2006 Notification.
- The Environmental Clearance (EC) process "non-transparent, undemocratic, unjust and unaccountable".

#### **Concerns in General**

- The most devastating blow to the EIA regime is the creation of an Ex-Post-Facto Clearance Route — where an EIA clearance was never sought or granted, and the construction of the project took place regardless, the project proponent can enter an assessment procedure, with some minor fines for the violations, and find its sins blessed.

- \* Where such ex-post-facto clearances were being granted previously, the courts cracked down on them as illegal.
- \* Therefore, what could not be ratified will now find itself notified. The legality of sidestepping the courts is questionable and will have to be tested.
- \* The Supreme Court ruled that the "concept of an ex-post facto EC (environmental clearance) is in derogation of the fundamental principles of environmental jurisprudence", "detrimental to the environment, and could lead to irreparable degradation".
- It will become a business decision as to whether the law needs to be followed or the violation can be "managed".
- The draft notification also shortens the time for the public to furnish responses on the project.
  - \* For project-affected people, who are frequently forest dwellers or otherwise do not have access to information and technology, this will make it harder to put forth representations.
- Another important area that needs attention is ensuring stringent and frequent compliance monitoring to check if the clearance conditions are being met by the firms.
  - \* Currently, the EIA norms require once in six months of compliance monitoring.
  - \* The draft EIA notification, 2020 proposes to relax the follow-up compliance monitoring frequency to once a year.
- Industries that previously fell under the categories that required a full assessment have been downgraded.
  - \* The construction industry will be one such beneficiary, where only the largest projects will be scrutinised fully.
  - \* While defence and national security installations were always understandably exempt, a vague new category of projects "involving other strategic considerations" will also now be free from public consultation requirements.

#### **Impact**

- Weakening the EIA process is essentially anti-democratic. For affected communities, where seismic shifts in the local environment can threaten livelihoods, flood a valley or destroy a forest, public consultation is a referendum on existential threats. To curtail it is to silence voices that are scarcely heard otherwise.

#### **Conclusion**

- India is currently the fifth most vulnerable country to climate change. The need for environment clearance for a project must be seen as a measure to achieve sustainable development not environmental degradation.



- In fact the current economic crisis is a direct consequence of weak environment regulation.

#### 4. **Elephant Killing in Kerala**

##### Context

- Death of a pregnant elephant in Kerala after she ate a pineapple laden with firecrackers.

##### Sequence of events

- The wild elephant had allegedly wandered out of the Silent Valley National Park (SVNP) in Palakkad, in search of food.
- When the animal allegedly bit into the fruit stuffed with firecrackers, she was grievously injured eventually leading to her death.

##### Food Bombs

- It is considered to be a traditional hunting practice.
- These food bombs are mainly placed to hunt and kill wild boars, and in the process these bombs claim lives of other wild animals and even livestock.
- They are prepared by using locally available gun powder and gelatin sticks which are used to make firecrackers.
  - \* They are wrapped in animal parts like intestines and in fruits to attract the wild boars with its strong smell.
  - \* Wild animals, like leopards and jackal, try to feast on these and meet a tragic end.
- When the animals chew the balls filled with explosive, it blasts in the mouth causing a painful death to the animals.

##### Man-Animal Conflict

- This is a horrifying reminder of the rising conflicts between humans and animals. This is expected to grow as humans are entering areas meant for wildlife for commercial activities further diminishing their habitat.
- This raises questions of development at the cost of environment, with little to mitigate the larger issue of lost ranges and blocked corridors for these wandering elephants.
- Shrinking ranges and feeding grounds for elephants cause serious worry, because the animals look for soft landscapes adjoining forests such as coffee, tea and cardamom estates, and in the absence of these, wander into food-rich farms falling in their movement pathways.

##### Way forward

- We are at conflict with wildlife; we have to find a way to co-exist, as animals too have a right to live. Consideration for wildlife while planning infrastructural projects and financial allocations for mitigation measures are needed to address the issue.

- A sensible course open to conservation-minded governments is to end all intrusion into the 5% of protected habitats in India, and draw up better compensation schemes for farmers who lose crops to animals.
- A culture shift to protect, rather than prospect, would genuinely enrich people and save biodiversity.

#### 5. **Exotic Species- New guidelines for import**

##### Context

- The Ministry of Environment, Forest and Climate Change (MOEFCC) has issued an advisory saying people importing “exotic live species” will have to make a voluntary disclosure.

##### Exotic Live Species

- It includes animal or plant species moved from their original range (location) to a new one.
  - \* Several exotic species of birds, reptiles, small mammals, fishes and even some plants are imported.
- The Ministry has said “exotic live species” shall be construed to mean only “the animals named under the Appendices I, II and III of the Convention of International Trade in Endangered Species (CITES) of Wild Fauna and Flora”.
  - \* CITES Appendix I, no trade happens
  - \* Appendix II, trade can happen with prior permission
  - \* Appendix III, there are a large number of animals and birds which can be traded

##### Guidelines

- The advisory highlights a period of six months (from the date of the official order) to be given for voluntary disclosure for persons in possession of exotic live species in India. The disclosure needs to be made before the Chief Wildlife Warden of each state.
- For new “exotic live species”, the importer should obtain a no-objection certificate from the Chief Wildlife Warden (CWLW) of the State.
- For existing species, stocks “shall be declared by the owner/holder (stock, as on 1 January 2020) to the Chief Wildlife Warden (CWLW) of the concerned State or UT”.
- The advisory also has provision of “registration of progenies of imported animals” to the respective CWLW within 30 days after their birth.
- Forest officials will physically verify the submissions, check whether the facilities where the species are being housed are safe, and issue online certificates to owners within another six months from the date of disclosure.

##### Why was the decision taken?

- The move comes as the outbreak of coronavirus (COVID-19) has raised global concerns about illegal wildlife trade and zoonotic diseases.

- It will create a process where all imports will be screened.

#### **Significance**

- It is a welcome step towards curbing illegal exotic wildlife trade in India.
- These regulations will act as deterrents for both buyers and sellers.

### **6. FATF report flags wildlife trade**

#### **Context:**

- The Financial Action Task Force (FATF), in its first global report on the illegal wildlife trade called “Money Laundering and the Illegal Wildlife Trade” report, has described it as a global threat, which also has links with other organised crimes such as modern slavery, drug trafficking and arms trade.

#### **Findings of the report:**

- The illegal wildlife trade is estimated to generate revenues of up to \$23 billion a year.
- Criminals are frequently misusing the legitimate wildlife trade, as well as other import-export type businesses, as a front to move and hide illegal proceeds from wildlife crimes.
- Criminals rely regularly on corruption, complex fraud and tax evasion.
- The findings of the study expressed concern over the lack of focus on the financial aspects of the crime.
- The study has highlighted the growing role of online marketplaces and mobile and social media-based payments to facilitate movement of proceeds.
- The findings are based on inputs from some 50 jurisdictions across the FATF global network, as well as expertise from the private sector and civil society.

#### **Concerns:**

- The FATF found that jurisdictions often did not have the required knowledge, legislative basis and resources to assess and combat the threat posed by the funds generated through the trade.
- The report noted that in 2012, India amended the Prevention of Money Laundering Act removing a value threshold — of ₹30 lakh and above — that was earlier applicable to the wildlife trade predicates.
- There is an increasing international concern that the crime could lead to more zoonotic diseases in the future.

#### **Way forward:**

- The report says a financial investigation is the key to dismantling the syndicates involved, which can in turn significantly impact the associated criminal activities.
- Spread of zoonotic diseases in the recent years underlines the importance of ensuring that wildlife is traded in a legal, safe and sustainable manner, and that countries remove the profitability of illegal markets.

- Growth of online marketplaces for such illegal wildlife trade warrants a coordinated response from government bodies, the private sector and the civil society.

### **7. Gir Lions**

#### **Context**

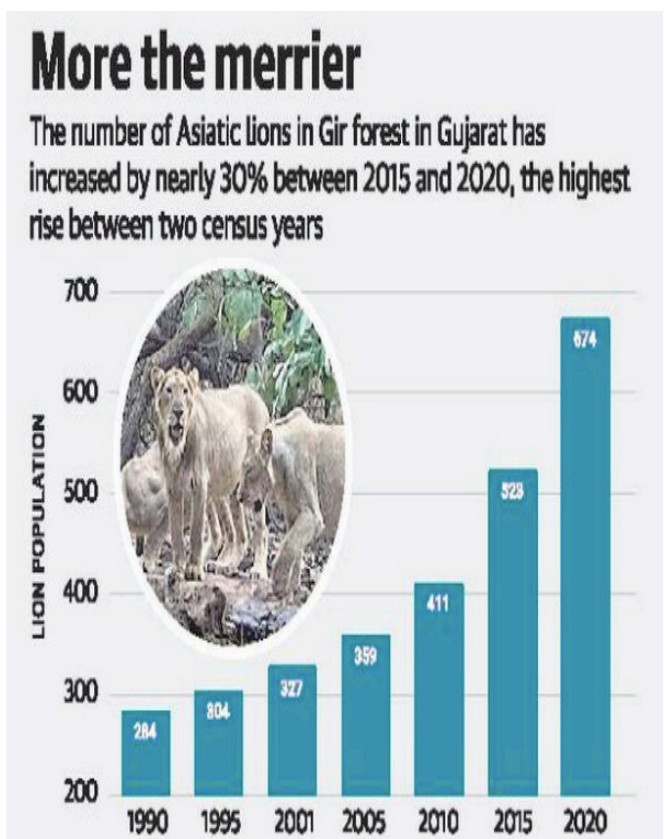
- Increase in population of Asiatic lions in the Gir forest region.

#### **Details**

- India has recorded a 29% increase in population of Asiatic lions, living in Gujarat Gir forest, in the past five years — from 523 in 2015 to 674 in 2020.
- The period also saw a 36% increase in the distribution area of the lions from 22000 sq. km in 2015 to 30000 sq. km in 2020.

#### **Population estimation of Asiatic lions**

- It is conducted at an interval of five years.
  - \* The first Lion Census was conducted by the Nawab of Junagadh in 1936; since 1965, the Forest Department has been regularly conducting the Lion Census every five years.
- Unlike in previous years, this year's count was estimated not from a Census, but from a population “observation” exercise called Poonam Avlokan (full-moon night estimation exercise).



### Strategies and interventions implemented by State Forest Department

- Community participation
- Use of technology
- Habitat management and increase in prey base
- Human-lion conflict mitigation
- Healthcare including import of vaccines after some lions were infected with Canine Distemper Virus (CDV).

### **Poonam Avlokan**

- It is a monthly in-house exercise carried out every full moon.
- Field staff and officers spend 24 hours assessing the number of lions and their locations in their respective jurisdictions.
- It was a mechanism developed by the Forest Department in 2014 as part of preparations for the 2015 Lion Census.

### How is this 'observation' different from a regular census?

- The Lion Census involves larger participation. Around 2,000 officers, experts and volunteers were involved in the 2015 Census. That makes the Census more transparent.
  - \* The lion 'observation' was conducted by around 1,400 forest staff and a few experts.
- The Lion Census usually runs for more than two days, including a preliminary census and a final census.
  - \* It is done using the Block Counting Method — in which census enumerators remain stationed at water points in a given block and estimate abundance of lions in that block, based on direct sighting of lions who need to drink water at least once in 24 hours during the summer.
- A 'lion observation' is an in-house exercise, conducted only by forest staff.

- \* The methodology too is different as, instead of remaining stationary at water points, teams keep moving in their respective territories and make their estimates based on inputs provided by lion trackers and on chance sightings.

## **8. Golden Langurs**

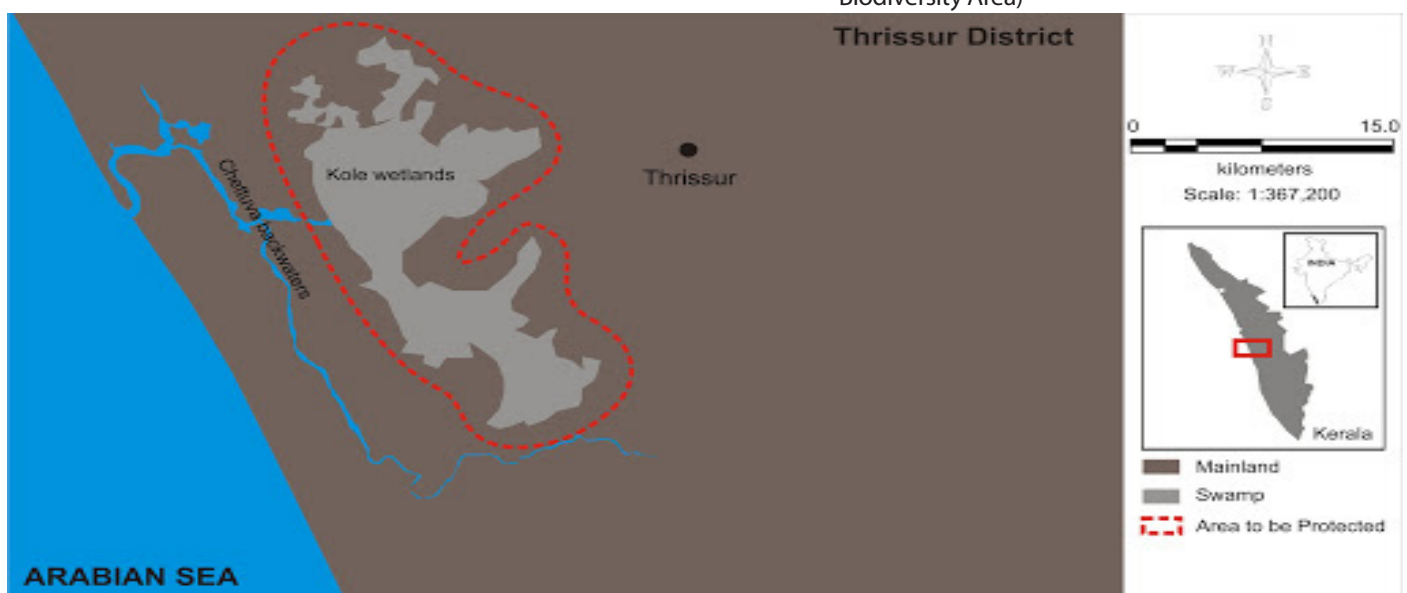
- Gee's golden langur (*Trachypithecus geei*), also known as, simply the golden langur, is an Old World monkey found in a small region of western Assam and in the neighbouring foothills of the Black Mountains of Bhutan.
- It is one of the most endangered primate species of India and is listed as endangered under the IUCN classification.
- It is endemic to the semi-evergreen and mixed-deciduous forests straddling India and Bhutan.

### Concerns:

- Their habitat in Assam has been encroached upon and fragmented drastically in the last 30 years owing to selective logging. This limits their food sources.
- Obstructions such as wires, and gaps in the forest due to felling, have increased the threat of inbreeding among golden langurs.

## **9. Kole Wetlands**

- The Kole wetlands, covering an area of 13,632 ha are spread over Thrissur and Malappuram districts in Kerala
- "Kole", a Malayalam word, indicates a field that gives a bumper crop referring to the peculiar cultivation practice carried out from December to May
  - \* Rice cultivation in Kole started as early as the 18th century by reclaiming the Trichur kayal lands (backwaters) by erecting temporary earthen bunds.
  - \* The water pumped out from the field is stored in a network of canals in the area
- It is a Ramsar site and an IBA (Important Bird and Biodiversity Area)



### 10. Magallanodon baikashkenke

- It is a small mammal that would have lived in southern Patagonia during the late Cretaceous era, alongside dinosaurs, crocodiles, turtles and birds
- It is the southernmost record of Gondwanatheria
  - \* Gondwanatherian — an enigmatic group of mammals that lived in the Southern Hemisphere during the age of dinosaurs.

#### Context

- Chilean and Argentine researchers have unearthed teeth in far-flung Patagonia belonging to a mammal that lived 74 million years ago.
- It was found near Torres del Paine National Park, a remote area of Patagonia famous for its glacier capped Andean spires and frigid ocean waters.

### 11. Narcondam hornbill

- The Narcondam hornbill is an endangered species and is endemic to the Narcondam Island in Andamans.
- The dormant volcanic island of Narcondam is a protected habitat for the hornbills.
- IUCN status: endangered

#### Threats:

- Habitat destruction remains the biggest threat to hornbills around the world.
- Narcondam hornbills faced the threat of extinction due to habitat loss and hunting. Being endemic to an isolated, uninhabited island, the Narcondam hornbill faces the threat of extinction in the event of a natural calamity causing a species wipe-out.

### 12. Oil spill in Russia's Arctic region

#### Context

- Russia's President Vladimir Putin has declared a state of emergency after 20,000 tonnes of diesel oil leaked into the Ambarnaya River within the Arctic Circle.
- The spill happened when a fuel tank at a power plant near the Siberian city of Norilsk collapsed.

#### Ambarnaya River

- It is a river in Siberia which flows in a northerly direction into Lake Pyasino.
- It is heavily polluted by the mining industry of Norilsk.

#### How did the leak happen?

- The thermoelectric power plant at Norilsk is built on permafrost, which has weakened over the years owing to climate change.
- This caused the pillars that supported the plant's fuel tank to sink, leading to a loss of containment.

#### Oil Spill

- The contamination of seawater due to an oil pour, as a result of an accident, human error, or natural calamity, is termed as an oil spill.

#### Impact

- The spill has contaminated a 350 sq km (135 sq mile) area.
- Environmentalists have said the river would be difficult to clean, given its shallow waters and remote location, as well as the magnitude of the spill.
- An environmental oversight agency of the Russian government pegged the overall damage at "several dozen, perhaps hundreds of billions of rubles".
- Aquatic species affected with this spill usually migrate.

#### Measures taken

- Boom obstacles were placed in the river, but they were unable to contain the oil because of shallow waters.
  - \* Booms are temporary floating barriers used to contain marine spills, protect the environment, and assist in recovery.
  - \* 1. A boom includes a containment partition that floats on and extends above the water's surface, and a "skirt" or "curtain" that sinks into the water



- \* The state of emergency declared would bring in extra forces and federal resources for the clean-up efforts.

#### How is oil spill controlled in general?

- Skimmers: Once the oil is bounded by oil booms, it can be extracted or skimmed easily with the help of skimmers or oil scoops. These skimmers are fitted onto boats to remove the floating oil or greasy contaminants.
- Sorbents: Materials that can absorb liquids are termed as sorbents. The use of sorbents is a natural process of oil clean-up. The most common types of sorbents are peat moss, vermiculite (straw), and hay.
- In situ burning is the process of burning spilled oil where it is on the ocean. Any burn operation includes careful air monitoring to ensure smoke or residue resulting from the burn do not adversely impact people or wildlife.
- Dispersion: Chemical dispersion is achieved by applying chemicals designed to remove oil from the water surface by breaking the oil into small droplets.

#### Challenges

- Oil spill becomes challenging when it comes to extreme climate zones such as the Arctic. It becomes difficult to remove the oil from ice and collect it.



- Cold temperatures, poor visibility, remoteness, and lack of required infrastructure and challenges in communication are a few issues involved for spill response in the Arctic region.

### 13. Scorpionfish (*Scorpaenopsis neglecta*)

- It is a fish known for its stinging venomous spines and ability to change colour
  - \* The fish gets its unique name because like a scorpion, it too stings its prey with a deadly venom.
  - \* The fish has the ability to change colour and blend with its surrounding environment to escape from predators and while preying.
- Unlike other fishes, band-tail scorpionfish uses its lateral sensory system instead of eyes to hunt its prey.
- A nocturnal feeder, it lies motionless at the bottom of the sea and waits for its prey to come closer to it. It has the power to attack and suck its prey with lightning speed.
  - \* It mainly feeds on small benthic fishes like gobies and blennies, crustaceans and other benthic macro invertebrates found in coral reefs, rocks and algal beds.

### 14. Rhacophorus malabaricus

- Malabar gliding frog or Malabar flying frog is endemic to the rain forests of Western Ghats
- It is a rare amphibian that can glide in the air up to 10 to 12 meters.
- Males are smaller than females.
- Its IUCN status is Least concern
- These frogs exhibit interesting behavior such as cannibalism among tadpoles.

#### Threats

- It was declining due to deforestation, climate change, developmental activities and toxic chemicals in the region.

### 15. Tadoba Andhari Tiger Reserve

- It is located in Chandrapur district of Maharashtra.
- It is Maharashtra's oldest and largest national park.
- "Tadoba" is taken from the name of the god "Tadoba" or "Taru", worshipped by the tribes who live in the dense forests of the Tadoba and Andhari region, while "Andhari" refers to the Andhari river that meanders through the forest
- Tadoba reserve is a predominantly southern tropical dry deciduous forest

### 16. UN Global Climate Action Awards

- They are organised by the Momentum for Change initiative of the UN Climate Change Secretariat.

- \* It is an initiative spearheaded by the United Nations Climate Change Convention (UNFCCC) Secretariat to shine a light on the enormous groundswell of activities underway across the globe that are moving the world toward a highly resilient, low-carbon future.

- The award winning projects are recognized for their innovative solutions that address climate change, and help drive progress on many other sustainable development goals like poverty alleviation, gender equality and economic opportunity.

#### Background

- Infosys received the 2019 UN Global Climate Action Awards under the category of 'Climate Neutral Now'; thus becoming the only Indian company ever to win a UN climate award.

#### Climate Neutral Now

- Climate Neutral Now is an initiative launched by UN Climate Change, aiming at encouraging all stakeholders in society to take climate action to achieve a climate neutral world.
- It aims to contribute to limiting the rise of temperature.

#### Context

- Infosys misses carbon neutral target for 2020.

#### Details

- Infosys began its action to combat climate change in 2008 with an assessment of its carbon footprint. In 2011, it made a voluntary commitment to the United Nations to become carbon neutral.
- The company has been on an accelerated plan focusing on energy efficiency, renewable energy, and offsetting emissions.

### 17. World Environment Day

- The World Environment Day (WED) is celebrated on 5th June every year.
  - \* Since 1974, WED has been celebrated every year on 5 June; engaging governments, businesses, celebrities and citizens to focus their efforts on a pressing environmental issue.
- Every World Environment Day is hosted by a different country, in which official celebrations take place. 2020's host is Colombia in partnership with Germany.
- The WED has been a flagship campaign for raising awareness on issues ranging from emerging environmental issues to marine pollution, human overpopulation, and global warming, to sustainable consumption and wildlife crime.

#### Theme

- The theme for the WED is decided by the United Nations Environment Programme (UNEP).
- The theme for 2020 is 'Biodiversity'.

- \* The theme focuses on the need to save resources and reconnect with nature.
- \* The theme is extremely relevant because human beings are part of the ecosystem and cannot continue to survive in isolation. Biodiversity is important for the survival of all living things big and small, on land, or in water.

### **#iCommit' initiative**

- The '#iCommit' initiative is centered on the idea of building an energy resilient future.
- The initiative is a call to all stakeholders and individuals to continue moving towards energy efficiency, renewable energy, and sustainability to create a robust and resilient energy system in the future.
- The '#iCommit' initiative, driven by Energy Efficiency Services Limited (EESL), under the administration of Ministry of Power, Government of India is uniting a diverse set of players such as Governments, Corporates, Multilateral and Bilateral Organisations, Think Tanks and Individuals.
- The initiative will also celebrate and promote key undertakings of Government of India such as
  - \* National Electric Mobility Mission 2020
  - \* FAME 1 and 2
  - \* DeenDayalUpadhyaya Gram Jyoti Yojana
  - \* the Saubhagya Scheme
  - \* Ujwal DISCOM Assurance Yojna (UDAY)
  - \* Atal Distribution system Improvement Yojna
  - \* Smart Meter National Programme
  - \* Pradhanmantri Kisan Urja Suraksha evam Utthan Mahaabhiya (KUSUM)
  - \* Solar Parks
  - \* Grid Connected Rooftop
  - \* Unnat Jyoti by Affordable LED for All (UJALA)
  - \* Atal Jyoti Yojna (AJAY) amongst others.

### **Context**

- The Minister of State (IC) for Power and New & Renewable Energy, initiated the '#iCommit' campaign, on the occasion of World Environment Day.

### **Nagar Van Scheme**

### **Context**

- With biodiversity the theme of World Environment Day (WED), the ministry of environment, forest and climate change (MoEFCC) has launched Nagar Van Scheme.

### **Details:**

- The scheme emphasises on urban forestry.
- Under the scheme, around 200 urban forests are to be developed all over the country in the next five years.

- The launch of 'Nagar Van' scheme will provide an opportunity to the states to manage urban ecosystems.

### **Warje Urban Forest:**

- Warje Urban Forest in Pune has been showcased as it can become a role model for the country in implementation of the Nagar Van scheme.
- Warje, situated on the bank of the Mutha River has a catchment area in the western hills that brings along fertile soil and sufficient water.
- The Union Government took a significant and ambitious step to increase the green cover on barren lands. The project 'Urban Forest' was then started by the Ministry of Environment, Forests and Climate Control (MoEFCC) with assistance from the Forest Department, Government of Maharashtra.
- It was totally barren and used as a dump yard by the residents in the vicinity. Stressing on the need for creating a balance between development and environment conservation, big corporates extended their support.
- Public Private Participation as seen in Warje is one of its best examples.
- A number of residents have planted and adopted trees in memory of their loved ones at Smriti Van in Warje.
- A total of 9500 trees were planted in the area under CSIR initiative between 2015 and 2017.
- The neglected land has now been transformed into an area of rich biodiversity of various species of plants, birds, butterflies, reptiles and mammals.
- The project also helps in absorbing approximately 129,000 Kg carbon-dioxide and producing about 5,62,000 Kg oxygen per year.
- Undoubtedly, Project Urban Forests is helping in maintaining the ecological balance, serving both environmental and social development goals.

### **Importance of Urban Forests:**

- Urban forests play an important role in the ecology of human habitats in many ways.
- They offer many benefits like impacting climate and the economy while providing shelter to wildlife and recreational area for city dwellers.
- The World Economic Forum says that cities that have more trees are less noisy, with lower pollution levels.
- A fully-grown tree can annually absorb up to 150kg of carbon dioxide (CO<sub>2</sub>) – one of the main greenhouse gases contributing to global warming.
- Trees can moderate temperatures in heavily built cities, where heat radiated from concrete on buildings and roads, makes these areas hotter than the surrounding countryside, in a phenomenon known as 'heat island' effect.

- Food and Agriculture Organization adds that trees in urban areas reduce ozone, sulphur dioxide and particulate matter; remove large quantities of carbon dioxide from the atmosphere, and release oxygen.
- In many countries, there is a growing understanding of the importance of urban forests.
  - \* Cities like Rio de Janeiro and Johannesburg have large forests within their urban areas.
  - \* In India, most cities have gardens and parks, but not forests.

#### **Note:**

- India is endowed with rich biodiversity having several species of animals and plants and hosts 4 of the 35 global bio-diversity hotspots containing several endemic species.
- India has 8% of world biodiversity with only 2.5% of world land mass.
- Also, the freshwater availability in the second most populous country in the world is just 4%.

### **18. Poaching doubled during lockdown, says wildlife trade monitoring group**

#### **Context**

- A report titled "Indian wildlife amidst the COVID-19 crisis: An analysis of status of poaching and illegal wildlife trade" by TRAFFIC, a leading wildlife trade monitoring network, has recorded a significant increase in poaching in India during the over two month lockdown period.

#### **Details**

- Poaching for meat (for self-consumption) and local trade have more than doubled during lockdown.
- A comparison of pre lockdown and post lockdown reveals the spike
- The report also pointed out that the number of persons arrested for poaching related cases during lockdown was higher than in pre-lockdown weeks.

#### **Concerns**

- The outcome of this study indicates that "despite efforts by law enforcement agencies, wild animal populations in India are being subjected to additional threats during the lockdown period".
- It has placed additional burdens on wildlife law enforcement agencies.
  - \* Therefore, it is imperative that these agencies are supported adequately and in a timely manner so they can control the situation

### **19. A struggle to co-exist with humans**

#### **Context:**

- The article notes the changes observed in the Himalayan realm and the effect it has had on the ungulates (large hoofed mammals).

#### **Details:**

- There has been the increase in domesticated cashmere goats and stray dogs which have started hunting ungulates including threatened, endangered, and rare ones such as kiang, chiru, saiga and takin.
- The research study also draws similarities between the Himalaya and the Andes, both homes to unique ungulate fauna. Both are currently experiencing increased deglaciation, human colonisation, climate alteration and livestock & tourism-induced changes.

#### **Concerns:**

#### **Threat posed by stray dogs:**

- A research study notes that the 400 million free-ranging dogs – through disease, predation, and displacement – have had a detrimental effect on the ungulate communities on every continent.
  - \* Dogs prey on saiga, blue sheep, argali, chiru, kiang, goral, ibex, sambar, chital and blackbuck.
  - \* The high elevation dogs of Bhutan also harbour tapeworms which when consumed via grasses by yaks can cause coenurosis, a neurological disease that may result in about 10% mortality of young yaks.

#### **Threat posed by human activities:**

- Human activities such as the seasonal relocation of agro-pastoralists to collect the worm fungus Cordyceps can also have an impact on the ungulates. These high-elevation environments have experienced minimal direct human disturbance, and this movement can lead to the displacement of native species.
- Many apex predators of the region have also suffered due habitat conversion and loss of prey base.
- Overharvest, poaching, and wildlife slaughter constituting the major issues of the 19th and 20th century, will not be the most pressing in the 21st century instead, climate change and rapid destruction of habitat will constitute the key threat.
  - \* High-elevation ungulates have been known to be affected through changes in ice and snow and the availability of snow patches.

#### **Way forward:**

- There is the need for conservation efforts to protect the remaining fauna of the region.
- The conservation efforts can simultaneously recognize that disturbed habitat and altered communities still offer important contributions to beta biodiversity.
  - \* In ecology, beta diversity ( $\beta$ -diversity or true beta diversity) is the ratio between regional and local species diversity.
  - \* Beta diversity measures the change in diversity of species from one environment to another. In simpler terms, it calculates the number of species that are not the same in two different environments.

## 20. Flattening the climate curve

### Context:

- Climate change.

### Background:

- The atmospheric concentration of carbon dioxide and other Green House Gases (GHGs) and the average global temperatures (both interrelated) have shown an upward trend with the advent of the industrial age.

### **Carbon dioxide concentration:**

- The CO<sub>2</sub> curve began its upward march about 18,000 years ago when it was a little under 200 parts per million (ppm) and earth was much colder. By the time it reached 270 ppm about 11,500 years ago, the warmer conditions accompanying this curve made it possible for the emergence of agriculture.
- Over the past million years, CO<sub>2</sub> levels never exceeded 280-300 ppm. The concentrations went back to 200 ppm before rising again in a cyclical fashion.
- The CO<sub>2</sub> levels remained steady at close to 280 ppm for 10,000 years until, beginning in the mid-19th century, they began to rise with usage of coal and oil to fuel the industrial revolution, and burning of forests to expand agriculture and settlements.
- From being a mere 0.2 billion tonnes of CO<sub>2</sub> emissions in 1850, annual emissions have increased to 36 billion tonnes by 2018. Thus, the levels of CO<sub>2</sub> in the atmosphere have reached 407 ppm in 2018, a level last experienced by earth some three million years ago.

### **Global average temperature:**

- From 1850 onwards, for over a century, the global temperature showed a slight warming trend. However, from 1975 onwards, the temperature graph has shown a distinct, upward trend.
- By 2015, the global average temperature has increased by a full degree Celsius relative to a hundred years previously. Under the current trends of emissions, the globe will heat up by 4°C by the end of the century.

### Concerns:

### **Climate change challenges:**

- The global warming has led to reducing sea ice cover and melting of glaciers. This has led to challenges such as rising sea levels and water security. The higher temperatures will also have an effect on agricultural production thus adversely affecting human food security.
- Climate change involves not just a change in temperature but every other component of weather, including rainfall, humidity and wind speed. Globally, there have been several extreme weather events such as hurricanes, heat waves or droughts. While no single event can be directly attributed to climate change, the collective trends are consistent with climate change predictions.

- \* The 2003 European heat wave killed over 70,000 people.
- \* The years 2015-19 have globally been the warmest years on record. The higher temperatures have also contributed to the Amazon fire of 2019, the bush fires of 2019-20 in Australia causing unprecedented devastation.
- \* If global CO<sub>2</sub> emissions continue to increase at the present rate, average summer temperatures would rise by 4°C in most states of India. Extremely hot days (days above 35°C), which were only five days in 2010, would increase to 15 days by 2050 and to 42 days by 2100 on average across all districts.

### **Climate finance:**

- The most common excuse from most countries is that the world cannot afford to curb GHG emissions for fear of wrecking the economy.
- At the UN Climate Conference in 2009, the richest nations had pledged to provide \$100 billion in aid each year by 2020 to the poorer countries for climate change mitigation and adaptation.
  - \* Climate Justice envisages that the wealthy nations, which have caused most of the GHGs resulting in global warming, need to pay other countries to cope with climate change.
- In 2017 only \$71 billion had been provided, with most of the money going towards mitigation and less than 20% towards climate adaptation. Even these amounts are doubtful because much of the so-called aid provided did not come out of dedicated climate funds but, rather, development funds or simply loans which had to be repaid.
- It also seems unlikely that the rich countries will deliver \$100 billion in tangible climate finance during 2020 in the light of the crisis due to the pandemic.

### **The tipping point:**

- By 2015, the global average temperature has increased by a full degree Celsius relative to a hundred years previously.
- The current estimates note that the world is far away from fulfilling their commitments under the Paris Agreement, that would keep average global temperature rise below 2°C compared to pre-industrial levels.
- A temperature rise beyond 2°C could set off a vicious cycle as the carbon sequestered into vegetation will be thrown back into the atmosphere.
  - \* Notably, about one-half of all CO<sub>2</sub> emissions have been absorbed by the atmosphere, equally by growing vegetation on land and by absorption in the oceans.



**Way forward:****Financial resources:**

- There is a need for adequate financing to tackle the looming climate crisis. The Intergovernmental Panel on Climate Change estimates that a sustained annual investment of \$2.4 trillion in more efficient energy systems is needed until 2035 in order to keep warming below the more ambitious 1.5°C relative to pre-industrial levels. This would amount to about 2.5% of the global GDP.

**Using the opportunity:**

- COVID-19 has given humanity a brief respite from the climate change curve. Carbon emissions from fossil fuels have surely reduced in the backdrop of the lockdown measures.
- There is a need for a paradigm shift in the structure and functioning of societies once the pandemic subsides. This should be used as an opportunity to flatten the climate change trajectory to avoid dangerous climate change.
- Technologists, economists and social scientists must plan for a sustainable planet based on the principles of equity and climate justice within and across nations. Leaders should act on the looming climate crisis with the same alacrity they have shown towards COVID-19.

**Additional information:**

- Technological interventions being suggested for tackling the climate change scenario.
  - \* Removing large amounts of CO<sub>2</sub> from the atmosphere and storing it safely. (Geo-sequestering)
  - \* Regulating solar radiation by geo-engineering technologies. (Using aerosols in the atmosphere or placing giant reflectors in space.)
- Some of the main drawbacks of the above technologies are that they are extremely slow and expensive and may bring unexpected results.

# HEALTH ISSUES

## 1. Aarogyapath

- It is a web-based solution for the healthcare supply chain that provides real-time availability of critical healthcare supplies.
- AarogyaPath would serve manufacturers, suppliers and customers.

### Significance

- This integrated public platform that provides single-point availability of key healthcare goods can be helpful to customers in tackling a number of routinely experienced issues.
  - \* These issues include dependence on limited suppliers, time-consuming processes to identify good quality products, limited access to suppliers who can supply standardized products at reasonable prices within desired timelines, lack of awareness about the latest product launches, etc.
- It also helps manufacturers and suppliers to reach a wide network of customers efficiently, overcoming gaps in connectivity between them and potential demand centres like nearby pathological laboratories, medical stores, hospitals, etc.
  - \* It will also create opportunities for business expansion due to an expanded slate of buyers and visibility of new requirements for products.
  - \* Overtime, analytics from this platform is expected to generate early signals to manufacturers on overcapacity as well as on looming shortages.
  - \* This would help to reduce wastage of resources due to inefficient forecasting and excess manufacturing, generate awareness about the demand for new technologies.

## 2. Airborne Rescue Pod for Isolated Transportation (ARPIT)

### Context

- Indian Air Force has designed, developed and inducted an Airborne Rescue Pod for Isolated Transportation (ARPIT) which will be utilised for the evacuation of critical patients with infectious diseases including COVID-19 from high altitude areas, isolated and remote places.

### How it works?

- The ARPIT utilises High Efficiency Particulate Air (HEPA) H-13 class filters and supports invasive ventilation using Transport Ventilator.
- The design integrates life support and monitoring instruments (defibrillator with multipara monitor, pulse oximeter, Infusion pumps etc), long arm gloves

for use by health care professionals and power pack with high endurance

- The isolation system has a suitable number of air exchanges, integration of medical monitoring instruments, and ventilation for an intubated patient.
- In addition, the pod generates high constant negative pressure in the isolation chamber for prevention of infection risk to air crew, ground crew and health care workers involved in air transportation

### Significance

- Supporting the "Atma Nirbhar Bharat", only indigenous materials have been used to fabricate this pod
- The indigenously designed system is cost effective compared to the imported systems

## 3. Amoebiasis

- It is a common infection of the gastro-intestinal tract.
- Amoebiasis is caused by the protozoan parasite *Entamoeba histolytica*. Only about 10% to 20% of people who are infected with *E. histolytica* become sick from the infection.
- Acute amoebiasis can present as diarrhoea or dysentery with frequent, small and often bloody stools. Chronic amoebiasis can lead to gastrointestinal symptoms plus fatigue, weight loss and occasional fever.
- The disease occurs worldwide but is more common in areas or countries with poor sanitation, particularly in the tropics.

### Symptoms of Amoebiasis

- Abdominal discomfort
- Diarrhoea that may include blood or mucus with periods of constipation
- Nausea
- Weight loss
- Fever
- Chills

### Context:

- New drug for amoebiasis in the offing.

### Details:

- A team of researchers from the Jawaharlal Nehru University (JNU) have developed new drug molecules against the protozoa that causes amoebiasis.
- This protozoan is anaerobic or micro-aerophilic in nature such that it cannot survive high concentrations of oxygen. However, during infection, it faces a high surge of oxygen inside the human body.

- \* The organism synthesizes large amounts of cysteine to counter oxidative stress.
- \* This pathogen deploys cysteine as one of the essential molecules in its defence mechanism against high oxygen levels.
- Entamoeba expresses two crucial enzymes for synthesizing cysteine.
- Researchers from JNU have characterized and determined the molecular structures of both these crucial enzymes.
- The researchers have also successfully screened for potent inhibitors for one of the enzymes, O-acetyl L-serine sulfhydrylase (OASS). Some of these inhibitors can check the growth of this organism with high efficacy.

#### 4. Dexamethasone

##### Background

- There was a large study published by researchers at Oxford University.
- The researchers said that the dexamethasone has been found to lower mortalities in very sick Covid-19 patients

##### Context

- India has included the drug in its "Clinical Management Protocol: COVID-19" for the disease.
  - \* It is a document published for use by health professionals as a reference.
- The Union Ministry of Health and Family Welfare said that dexamethasone can be given to severe Covid-19 patients as an alternative to another steroid methylprednisolone

##### Dexamethasone

- It is a type of corticosteroid that has long been used for its anti-inflammatory and immunosuppressant properties.
  - \* Corticosteroids are mainly used to reduce inflammation and suppress the immune system.
  - \* They can be used to treat problems such as allergies, asthma, eczema, inflammatory bowel disease and arthritis.
- It has been listed on the WHO Model List of Essential Medicines since 1977 in multiple formulations
- It is a cheaper option than tocilizumab.
  - \* Tocilizumab is also being tested as part of the RECOVERY trial and is an injectible.
- Dexamethasone and tocilizumab are not antivirals but work to modulate the immune response of the body when confronted by a viral infection such as COVID-19.

##### How does it work?

- Steroid drugs reduce inflammation, which sometimes develops in COVID-19 patients as the immune system overreacts to fight the infection.
  - \* This overreaction can prove fatal, so doctors have been testing steroids and other anti-inflammatory drugs in such patients.
- This has been cleared for patients in need of oxygen support and those who have excessive inflammatory response

##### Cautious Approach

- There was no benefit among those patients who did not require respiratory support.
- The WHO emphasises that dexamethasone should only be used for patients with severe or critical disease, under close clinical supervision.
- All India Drug Action Network, comprising several non-governmental organisations working to increase access to and improve the rational use of essential medicines, has written to the Centre on the lack of transparency about the COVID-19 Subject Expert Committee and approval of COVID-19 drugs.
  - \* Ex: Favipiravir

#### 5. Favipiravir

##### Context

- Covid-19 has thrown many questions and the answers are still not available. It has not only exposed the dire situation of the public health infrastructure, but also the opacity with which drug/medical device approvals are given.
- Recently, Drugs Controller General of India (DCGI) has granted approval to Favipiravir for the treatment of COVID-19 patients with mild or moderate symptoms

##### **Favipiravir**

- It is an antiviral given to inhibit viral replication. It is used as an anti-influenza drug.
- Originally it was manufactured by Japan's Fujifilm Toyama Chemical Ltd.

##### How Favipiravir works?

- Since the novel coronavirus is an RNA virus, studies have shown that favipiravir gets activated inside the cells and then gets incorporated into the viral RNA.
- Favipiravir inhibits the RNA-dependent RNA polymerase (RdRp) — an enzyme allows the coronavirus to replicate inside host cells
- It restricts the multiplication of the virus in the body reducing viral load.

**Which firms are manufacturing Favipiravir and what are the costs?**

- Glenmark Pharmaceuticals has launched the drug under the brand name FabiFlu, making it the first oral Favipiravir-approved medication in India for the treatment of Covid-19.
- The firm has fixed its price at Rs 103 per tablet.

**Side-effects**

- Birth defects and liver damage.
- The drug should also be used with caution in patients with history of abnormalities in metabolism of uric acid or having gout.
- Gout is a common and complex form of arthritis
  - \* In severely ill patients, the toxic proteins — known as the cytokine storm — produced by the overreaction of the body's immune system inhibit the activity of the favipiravir-RTP.
  - \* The drug is ineffective in stopping this cytokine storm from damaging the organs.

**Evidence-Based Medicine**

- It requires the testing of pharmaceutical drugs through Randomized Clinical Trials (RCT) wherein one set of patients get a placebo (or an alternate therapy) and the other set of patients gets the investigational drug.
- Neither the doctors nor the patients know who gets what drug.
- If the set of patients that gets the investigational drug shows a better outcome, it can be presumed that the drug has a demonstrable therapeutic effect on the disease in comparison to the comparator. This is the gold standard for demonstrating the efficacy of a drug in treating a particular disease.
- The data collected from such clinical trials are usually published in a peer-reviewed journal where they are subject to scientific scrutiny.
- This system has worked during this pandemic to disprove claims that hydroxychloroquine was useful in treating COVID-19.

- After the outbreak of COVID-19, doctors in China and Russia started using it to treat COVID-19 patients although there is no scientific consensus on the efficacy of the drug.

2. As per Glenmark's filing with the Bombay Stock Exchange, the company has received "accelerated approval" from the DCGI for "restricted emergency use in India".

- \* On what basis did the DCGI grant approval?
- \* Will the underlying data be made publicly available to the medical community?
- \* While the New Drugs and Clinical Trial Rules, 2019 allow the DCGI to grant approvals for the use of certain drugs based on approvals granted overseas, that does not mean they do not question whether the drug can be approved or not in India on the basis of scientific rationale.
- There is no information on the DCGI's website explaining the scientific basis of its approval of Favipiravir for COVID-19.

3. According to the Clinical Trials Registry of India (CTRI), Glenmark's study was meant to be carried out on 150 patients at different hospitals with the aim of comparing Favipiravir with "standard care" provided to patients with mild or moderate COVID-19.

- The decision to enroll patients with "mild" COVID-19 is baffling given that virtually all these "mild" cases often resolve themselves without any intervention.
- Further, the CTRI does not explain the nature of the "standard care" being provided to the patients. It is important to disclose this information from a scientific and ethical viewpoint.
- If we do not know the treatment with which Favipiravir is being compared, how do we know if it is any better than perhaps a placebo?

4. Glenmark claims in a letter to the Bombay Stock Exchange that it was granted approval based on evaluation of data and expert opinion

- PubMed, a database that contains more than 30 million citations and abstracts of biomedical literature, lists a single study published in a journal called Engineering.
- It shows that a group of Chinese investigators did an observational study on 80 patients and concluded that those who got the drug tended to have faster disappearance of virus and quicker improvement of shadows in their chest x-rays.

- The study was not a randomised controlled trial and therefore, small size apart, had two serious flaws —

- \* bias (the sample studied is not representative of the population it was drawn from or the population at large) and
- \* Confounders (risk factors) (unable to control for all other factors that might differ between the two groups).

**Concerns**

1. No scientific consensus

- The Drugs Controller General of India (DCGI) has approved Glenmark Pharmaceuticals, to sell generic versions of Favipiravir for the treatment of COVID-19.
- This drug, originally invented by a Japanese company, was meant to treat influenza.

- \* 1. Confounding leads to an error in the interpretation of a measurement.
- \* Thus a well-designed robust scientific study on the effectiveness and safety of this drug in COVID-19 patients is missing.

#### 5. Subject Expert Committee (SEC)

##### **Subject Expert Committee (SEC)**

In 2012, the DCGI instituted a system of review by a Subject Expert Committee (SEC) to decide whether a new drug should be approved for the Indian market.

- The SEC was meant to have external experts who were specialists in the field of therapy being considered.
- After a SEC approval, the DCGI is required to take the final call on whether to approve a drug.
- Thereafter the information on which such decisions were made was required to be disclosed because the Right to Information Act requires such a disclosure.

- However, in this case, the minutes of the meetings, the composition of the SEC and the clinical trial results submitted to the SEC/DCGI are not available on the DCGI's website.
- A representative of Glenmark disclosed on a channel that the approval for restricted use was based on an "early readout" from the study; the study is expected to be completed in the coming weeks and months.
- So, on what basis did the DCGI approve restricted use of this drug?

6. The drug is currently not approved in "any of the highly-regulated markets" like the US and Europe for any indication.

- It has been approved in China, Russia and Japan for the seasonal viral flu.

##### **Conclusion**

- A culture of secrecy around drug approvals serves no purpose except for the benefit of pharmaceutical companies.
- If the drug does not work as advertised, the regulator would be responsible for promoting irrational medicine.
- Therefore until the DCGI makes public the clinical information on the basis of which the accelerated approval has been granted along with the minutes of the SEC meeting, where this drug was approved, doctors and patients should be cautious about its usage.

#### 6. Global Vaccine Summit 2020

- The virtual Global Vaccine Summit hosted by United Kingdom was to urge nations around the world to pledge funding for vaccinations to save millions of lives and protect the world from future outbreaks of

infectious diseases.

##### **Context**

- Prime Minister addresses the virtual Global Vaccine Summit 2020.
- He pledged USD 15-million as India's contribution to the vaccines alliance GAVI at the Global Vaccine Summit hosted by the UK.

##### **GAVI**

- Global Alliance for Vaccines and Immunisation (GAVI) is a global health partnership of public and private sector organizations dedicated to "immunisation for all".
- GAVI's strategy supports its mission to save children's lives and protect people's health by increasing access to immunisation in poor countries.
- It helps vaccinate almost half the world's children against deadly and debilitating infectious diseases

##### **Partnership**

- Gavi's impact draws on the strengths of its core partners, the World Health Organization, UNICEF, the World Bank and the Bill & Melinda Gates Foundation
- Gavi also works with donors, including sovereign governments, private sector foundations and corporate partners; NGOs, advocacy groups, professional and community associations, faith-based organisations and academia; vaccine manufacturers, including those in emerging markets; research and technical health institutes; and developing country governments
- Its partners provide funding for vaccines and intellectual resources for care advancement.

#### 7. I-Lab

- This is India's first I-Lab (infectious disease diagnostic laboratory) for COVID testing in rural and inaccessible areas of India.
- This mobile testing facility will be deployed through the Department of Biotechnology (DBT) testing hubs to remote regions of the country for COVID testing.

##### **Who developed it?**

- The I-Lab has been created in a record time of 8 days by the Andhra Pradesh Med-tech Zone (AMTZ) team with the support of DBT under the National Biopharma Mission being implemented by the Public Sector BIRAC.
- The I-Lab has been built under the DBT-AMTZ COMManD [COVID Medtech Manufacturing Development] Consortia.
- The consortia was formed by the DBT and the AMTZ to address the shortage of critical healthcare technologies in India and move progressively towards a stage of self-sufficiency.



**Specifications:**

- The I-Lab is a BSL-2 facility with on-site ELISA, RT-PCR, Bio chemistry analysers. It can run 50 RT-PCR reactions and about 200 ELISA in a day. Double set of machines can help increase the capacity to about 500 per day in 8 hours shifts.
- It can be deployed in remote areas and can be lifted from Automotive Chassis, and can be put on goods train for sending to any location in the country.
- The BSL-2 Lab is as per NABL specifications and is being attached to DBT's certified testing centres.

**Context:**

- The Union Health Minister launched I-Lab, the DBT – AMTZ Mobile Diagnostic Unit for COVID Testing.

## **8. Lancet and NEJM retract controversial studies on COVID19**

**Background**

- Lancet is one of the influential medical journal in the world
- It had conducted a study on hydroxychloroquine (HCQ).
  - \* It found no benefit from the use of hydroxychloroquine (HCQ),
  - \* It concluded that the anti-malarial drug led to higher mortality in infected patients.
- The WHO Data Safety Committee found no evidence of HCQ-linked mortality in Covid positive patients

**Issues with data collection**

- Scientists and research community found problems with the methodology and, more importantly, the dataset.
- There was no way to tally patient records and the hospitals they were sourced from; and there were problems with the statistics deployed and the conclusions about the potential risk from the drug.
- It emerged that mortality attributed to the disease in Australia did not match with the country's own estimates.
- The bigger concern was that the data was supplied by Surgisphere Corporation, which had a handful of employees with limited scientific expertise, and claimed to have aggregated its numbers by compiling electronic health records in less than two months.

**Context**

- Because they faced criticism for the methodology and the opaqueness, the New England Journal of Medicine and The Lancet journal have retracted their studies.

**Inference**

- The key lesson is that it is a mistake to assume the scientific process as one divorced from the influence of power, privilege, finance and politics.
  - \* Medical journals do have financial conflicts of interest, particularly in their relations with pharmaceutical companies.
  - \* Some journals have been captured by pharmaceutical companies because they have come to depend on them.
  - \* 1. Many, including some of the most prestigious journals, publish mostly trials that are funded by the industry.
- The means and methods to a scientific result matter more than results — only achieved through global scrutiny.
- It threatens to undermine confidence in two of the world's top medical journals in the midst of a pandemic.

**Concerns**

- This can influence how doctors treat patients and the actions taken by public health authorities.
  - \* This could cause a 'scare' among the public and genuine treatment may be asked to be withdrawn.
- Peer review—i.e. asking peers of the authors of scientific studies to review the studies critically before publication—is the process that is supposed to ensure the scientific quality of journals.
  - \* It is a sacred process—and the phrase 'peer reviewed journal' is supposed to guarantee quality.
  - \* Studies have also shown that it is slow, expensive, ineffective, prone to bias and abuse, and hopeless at spotting errors and fraud.

**Conclusion**

- Much more needs to be done to improve the ethical accountability of editors and journals.

## **9. Oral Cancers**

**Context**

- IASST develops an artificial intelligence-based computer diagnosis framework for rapid and accurate diagnosis of oral cancers.

**Details:**

- Scientists at the Institute of Advanced Study in Science and Technology (IASST), Guwahati, an autonomous institute of the Department of Science & Technology, Govt. of India, have developed an Artificial Intelligence (AI) based algorithm as an aid to rapid diagnosis and prediction of oral squamous cell carcinoma.

- The framework developed will also help grading of oral squamous cell carcinoma.
- The study was conducted applying two approaches through the application of transfer learning using a pre-trained deep convolutional neural network (CNN).

#### **About oral cancer:**

- Oral cancer is cancer that develops in the tissues of the mouth or throat.
- It belongs to a larger group of cancers called head and neck cancers.
- Most develop in the squamous cells found in the mouth, tongue and lips.
- Oral cancer appears as a growth or sore in the mouth that does not go away.
- Around 16.1% of all cancers amongst men and 10.4% amongst women are oral cancer, and the picture is all the more alarming in NE India.
- Oral cavity cancers are also known to have a high recurrence rate compared to other cancers due to the high consumption of betel nut and tobacco.

### **10. Pharmacopoeia Commission for Indian Medicine & Homoeopathy (PCIM&H)**

#### **Context**

- The Cabinet approved the establishment of the Pharmacopoeia Commission for Indian Medicine & Homoeopathy (PCIM&H).

#### **Details**

- The Cabinet has given its approval to re-establish Pharmacopoeia Commission for Indian Medicine & Homoeopathy (PCIM&H) as a Subordinate Office under the Ministry of AYUSH.
- This will be done by merging two central laboratories at Ghaziabad – Pharmacopoeia Laboratory for Indian Medicine (PLIM) and Homoeopathic Pharmacopoeia Laboratory (HPL). Both were established in 1975.
- Currently, the Pharmacopoeia Commission for Indian Medicine & Homoeopathy (PCIM&H) is an autonomous body under the aegis of the Ministry of AYUSH established since 2010.
  - \* Originally established as Pharmacopoeia Commission for Indian Medicine (PCIM) in 2010, it was renamed as Pharmacopoeia Commission for Indian Medicine & Homoeopathy (PCIM&H) in 2014 to include homoeopathy in its name.
- It is intended to accord legal status to the merged structure of PCIM&H and its laboratory by virtue of making necessary amendment and enabling provisions in the Drugs & Cosmetics Rules, 1945.

#### **Objective**

- The chief objective of the Commission is to promote and preserve the well-being of humans and animals in India, by bringing out official standards for quality of drugs included in Ayurveda, Siddha, Unani &

Homoeopathy systems of Medicine used by AYUSH professionals and consumers.

#### **Significance**

- The merger is aimed at optimizing the use of infrastructural facilities, technical manpower and financial resources of the three organizations for enhancing the standardization outcomes of Ayurveda, Siddha, Unani and Homoeopathy drugs.
- This merger will facilitate focused and cohesive development of standards of AYUSH drugs and publication of pharmacopoeias and formularies.

### **11. Private Sector in the COVID Fight**

#### **Context**

- Seeking assistance of the private sector in the fight against COVID-19.

#### **Details**

- The COVID-19 pandemic is unlikely to disappear in the immediate future. Managing it would require extraordinary resources and investment.
- India's public health sector has been employed to battle this crisis. This unprecedented crisis has highlighted the critical need to mobilize the private sector too as the public sector might well not be able to manage if there is consistent increase in the number of cases.

However, the current strategies to involve the private sector in combating the infectious disease are shrouded in ambiguity.

- There are no clear policy guidelines to use private sector resources that could complement public sector efforts.
- How will the payments be made to the private sector if they are assisting the public sector?

Some policy options are to leverage private sector resources for testing, hospitalisation, procurement of biomedical equipment and supplies, and a central intelligence system.

#### **Laboratory services**

Despite governments trying to scale-up testing capacity in the country, there is still a long way to go for mass scale testing. Following options can be tested to scale up testing capacity:

- Option 1: An Accredited Private Laboratory can be contracted to be co-located in a public health facility preferably in tier-II/tier-III public hospitals.
  - \* States that already have private laboratories under a public-private partnership (PPP) contract can be asked to add COVID-19 tests.
  - \* The government may procure test kits and the private sector could charge a service fee from the government.
- Option 2: Suspect cases can be issued vouchers for testing at any empaneled private laboratories.

- \* E-vouchers generated by tele-health call centres can subsequently be reimbursed by the government.
- Option 3: A mobile sample collection and testing facility can be operated by a private entity in high density clusters; it can also be used as a fever clinic. This arrangement can be under the hub-spoke principle.
  - \* The cost of tests, key performance indicators and payment system should be worked out in the purchase contract.

### **Hospital infrastructure**

Hospitalisation of COVID-19 cases cannot be restricted to hospitals in major cities alone. Improving the infrastructure and capacity in tier II and tier III cities in collaboration with the private sector is critical.

- Option 1: A private contractor could be hired to overhaul an existing ward in a public hospital into an Intensive Care Unit (ICU) ward with additional beds and equipment and handover the refurbished ward to the public authority.
  - \* Under this turnkey project, an ICU ward could be made available within a short time.
- Option 2: In a scenario where the district hospital does not have staff to operate an ICU ward (option 1), a private hospital partner could be contracted to provide staff and operate the ICU ward.
  - \* Alternatively, a private hospital partner can refurbish, operate and later transfer the ICU ward. Though the model takes more time, the operator can convert the facility into any other speciality ward in the future.
  - \* The Centre can provide viability gap funding to the State to support the development of such a facility.
- Option 3: The government can refer patients to empaneled private COVID-19 hospitals, at a fixed package rate.
  - \* This kind of strategic purchasing or insurance reimbursement (say under the Pradhan Mantri Jan Arogya Yojana) requires clear policy directions, a robust referral system, agreement on tariffs, and a quick reimbursement mechanism.
  - \* The current government tariffs do not seem to evoke interest from the private sector.

### **Supply chain**

- The upsurge in the demand for test kits, ventilators, and other biomedical supplies cannot be met by current manufacturers or supply chain sources.
- Repurposing through alternate sources indigenously is the need of the hour.
- Besides facilitating quick credit access for manufacturing, the government may also give buy back guarantees and facilitate the supply chain channels.

### **Central Intelligence System**

- An IT system with artificial intelligence capability should be the backbone of supporting all public and private sector efforts in combating COVID-19.
- The intelligence system should seamlessly help in case identification, contact tracing, managing a tele-health centre, generating e-vouchers, authorising tests, managing referrals for isolation and hospitalisation in the private sector, payment, follow-up, etc.
- IT behemoths in India should be roped in to configure an integrated system to detect any unusual pattern in terms of an increase in numbers.

### **Conclusion**

- The resources dedicated to fighting the COVID-19 pandemic have the potential to create a good health infrastructure and strengthen health systems eventually.
- However, these initiatives require quick policy formulation followed by guidelines for contracting/purchasing, payments, defining standards, supply chain, strengthening procurement, etc.
- A group of inter-disciplinary experts to guide in institutionalizing the private partnership arrangements would go a long way.

### **Needed, a transfusion for public health care**

### **Conclusion**

- Excessive charges being levied by the private hospitals amidst COVID-19 pandemic.

### **Key Stats**

- India has many private hospitals. We have more hospital beds in the private sector than in the public sector.
- It is estimated that there are 19 lakh hospital beds, 95,000 ICU beds and 48,000 ventilators in India.
- Most of these are concentrated in seven States, Uttar Pradesh, Maharashtra, Tamil Nadu, Kerala, Karnataka, Telangana and West Bengal.
- Except for Tamil Nadu, Delhi and West Bengal, there are far more beds and ventilators in the private sector than in the public, according to the Center for Disease Dynamics, Economics & Policy.

### **Reasons for increase in private hospitals**

It is due to lack of adequate public health care.

- First, India after independence paid its attention towards primary care at the peripheral level, preventive measures, immunisation, maternity and paediatric care as well as dealing with common infections such as tuberculosis. These improvements have given India improved results in many healthcare indices.

- \* However, not enough hospital beds and specialised facilities were provided by the public sector during this time.
- \* This was capitalized by the private hospitals as the middle class and the wealthy wanted quality health care.
- The second reason for the dominance of private medicine in India is the lack of adequate investment in public health.
  - \* The Indian Government spends an abysmally low 1.3% of GDP on public health care, which is woefully inadequate.

### **Rural Urban Divide**

Private medicine in India is by no means uniform.

- Rural India: It is estimated that there are more than one million unqualified medical practitioners, mostly in the rural areas.
  - \* Most of them provide basic health care, charging a modest fee.
  - \* Some may have claims of expertise (often unproven) in alternative systems of medicine such as Ayurveda and homoeopathy.
  - \* Some even venture into minor surgery.
- Urban India: At the other end of the spectrum are state-of-the-art corporate hospitals, that are well-equipped and well-staffed and which provide excellent service at high cost.
  - \* These are often set up in metro cities at huge cost and have successfully engineered a reverse brain drain of many specialists from pursuing lucrative jobs abroad and staying back in or returning to India.

### **Hospitals run by charitable organisations**

- Between the two extremes are a large number of private practitioners and institutions providing a wide range of services of varying quality.
- Some are run by trusts, charitable organisations and religious missions, often providing excellent quality at modest costs.

### **Concerns**

- The wealthy demand, pay for, and often get, world-class health care.
  - \* The middle class is beginning to demand similar care at affordable cost.
  - \* The poorer 70% are left to the vagaries and mercy of an unpredictable public health-care system and low cost frauds.

### **What needs to be done?**

- Budget allocation has to be increased to address some of our pressing needs.

- \* The public health-care system desperately needs higher government spending. Health care cannot be left to private medicine in a developing country, or indeed, in any country.
- Greater transparency and tighter administration are necessary to ensure that our resources are utilised appropriately.
- Training of doctors and health-care workers also needs to be the responsibility of the government mainly.
  - \* Specialists should be adequately compensated to obviate their need for private practice.
- Private hospitals and institutions will need to be regulated. Costing and auditing of care and procedures need to be done by independent bodies. This will not only ensure appropriate care at the right cost but also prevent unreasonable demands of suspicious patients and family.

### **Conclusion**

- No hospital, business, institution or individual should profiteer from a national calamity such as the COVID-19 pandemic.
- Hospitals, like any other institution, have a social responsibility to provide care in times of need.

## **12. Rare Earth based magnetocaloric material for cancer treatment**

### **Context**

- Scientists at International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) have developed a rare earth based magnetocaloric material that can be used in treatment of cancer.

### **Details**

- A Rare Earth Alloy was chosen for the studies as some of the material is compatible with the human body.
- Magnetocaloric materials can provide controlled heating which can be used to kill tumor cells.
- With the help of controlled heating provided by Magnetocaloric materials and used in conjunction with radio therapy will reduce not only the side effects like blood pressure but also the time taken for the treatment.

### **Use of magnetocaloric materials**

- Advancements in magnetic materials led to the development of magnetic hyperthermia to try to address the issues of side effects of cancer treatment like chemotherapy.
  - \* In magnetic hyperthermia, magnetic nanoparticles are subjected to alternating magnetic fields of few Gauss, which produce heat due to magnetic relaxation losses.
- Usually, the temperature required to kill the tumor cells is between 40 and 45°C.



- \* However, the drawback in magnetic hyperthermia is the lack of control of temperature, which may damage the healthy cells in the body and also have side effects like increased blood pressure etc.
- These problems can be avoided by using magnetocaloric materials, as it can provide controlled heating.
- \* The advantage of magnetocaloric materials which heat up or cool down with the application and removal of the magnetic field, respectively is that as soon as the magnetic field is removed, cooling effect is generated, unlike in magnetic nanoparticles where overheating persists, even after removal of the magnetic field.

### 13. TB during COVID-19

#### Context

- The COVID-19 pandemic has currently overtaken every other health issue throughout the world. 'Covidisation' of the health system has also impacted TB patients, as TB control programmes are strained due to diversion of resources.
- Unfortunately, the problem is likely to get worse with the TB services emerging the biggest collateral damage of the COVID-19 pandemic in India.

#### Tuberculosis

- It is caused by a bacteria *Mycobacterium tuberculosis* which usually infects a patient's lungs, even though it may attack other body parts as well and it is an air-borne disease.
- This highly-infectious disease spreads from one person to another through the infected droplets which are ejected from the mouth of a person, when he speaks, sneezes, coughs or even sings.

#### Some of the most common symptoms of this disease include:

- A bad cough (more than 3 weeks)
- Coughing up blood
- Weight loss
- Weakness
- Fatigue
- Chest pain
- Chills and fever

#### Stats

- According to the annual report of the national tuberculosis elimination programme, India reported over 24.04 lakh tuberculosis cases in the year 2019 and notified more than 79 thousand death due to the severe bacterial disease.
- The shocking statistics shed light on the fact that the number of tuberculosis cases has increased by 14 % when compared to 2018 reports.

- The disease is highly infectious as according to the data provided by the World Health Organization, an infected person can spread the disease to "5 to 15 other people through close contact over the course of a year".

#### Impact of COVID pandemic on TB patients

- As the novel coronavirus outbreak continues to push the country's medical care system to the brink, new studies highlight the grave consequences of the COVID pandemic when it comes to monitoring, early detection and timely treatment of TB patients.
- As the country continues to grapple with the spread of the highly contagious novel coronavirus, active searching and screening of TB patients to detect the disease could take a hit, leading to a sharp rise in TB-related deaths in India.
- People will struggle to get care because the public sector is still dealing with the pandemic, while the private sector is not functioning at normal capacity or is reluctant to manage people with fever and cough.

#### Steps to be taken

Early diagnosis and timely treatment are vital for cutting down transmission of infection. The response, therefore, needs to be comprehensive and long term, rather than focused on just COVID-19.

- We need to resume public TB services, integrate TB and Covid-19 testing and
  - \* Since fever and cough are symptoms of both TB and COVID-19, simultaneous screening and testing can be encouraged.
  - \* It is critical for the National TB Elimination Programme to resume routine TB services, which include diagnostic services, such as microscopy and rapid molecular testing, as well as drug-susceptibility testing.
- We must be creative about engaging the private health sector to augment public TB services.
  - \* With most TB patients seeking diagnosis and treatment in the private sector, the integration of the private sector in the TB care cascade has shown good results.
  - \* Incentives for private-sector TB care providers
- TB patients who, because of the loss of their livelihood, have not been able to afford a proper diet
  - \* Direct Benefit Transfer to the patients for nutritional support

#### Conclusion

- Tuberculosis is just one of many areas in global public health that will be sidelined and adversely affected by the COVID-19 pandemic.
- It is important to start thinking critically about these effects, and develop comprehensive mitigation plans where possible.

## 14. Ultra Swachh

### Context

- DRDO develops 'Ultra Swachh' for disinfection of PPEs, electronic items, fabrics

### Development

- The system has been developed by the Institute of Nuclear Medicine & Allied Sciences (INMAS), the Delhi-based laboratory of DRDO in partnership with M/s Gel Craft Healthcare Private Ltd, Ghaziabad.
- The system is in compliance with International Standards of Industrial, Occupational, Personal and Environmental Safety.

### Details

- The system uses an advanced oxidative process comprising of multiple barrier disruption approach using Ozonated Space Technology for disinfection.
- The system is double layered with specialised Ozone sealant technology assuring trapping of ozone for the necessary disinfection cycle.
- It also has catalytic converter to ensure environment-friendly exhaust i.e., only oxygen and water.
  - \* Catalytic Converter is an exhaust emission control device that reduces toxic gases
- The Ultra Swachh comes in two variants namely, Ozonated Space and Trinetra Technology.
  - \* Trinetra technology is the combination of Ozonated space and radical dispenser.
  - \* Treatment is optimised with automation for quick disinfection cycle.
- Operating on 15 Ampere, 220 Volts, 50 Hertz power supply, the system has been provided with various safety features such as emergency shutdown, door interlocks, dual door, delay cycle, and leak monitors, etc. to ensure safe operations for longer duration.
- It is available in different sizes.

## 15. Umifenovir

### Context

- CSIR constituent lab CSIR-Central Drug Research Institute (CDRI) Lucknow, has received permission for carrying out Phase III randomised, Double blind, Placebo controlled trial of efficacy, safety and tolerability of antiviral drug Umifenovir.
  - \* A double-blind study is one in which neither the participants nor the experimenters know who is receiving a particular treatment.

### Good Safety Profile

- This drug has a good safety profile and acts by preventing the entry of virus into human cells and also by priming the immune system.
- Umifenovir is mainly used for treatment of influenza and is available in China and Russia, and has recently come into prominence due to its potential use for COVID-19 patients.

### Details

- To evaluate its efficacy in Indian patients, CSIR-CDRI has taken up the clinical trial.
- Further, it has developed the process technology for Umifenovir in record time and licensed the economical process technology for manufacturing and marketing the drug to a private company based in Goa, who have already received test license from DCGI.
- Notably, all the raw materials for the drug are indigenously available.

## 16. Vaccine Development

### Context:

- Vaccine development for COVID-19.

### Background:

#### Vaccines:

- A vaccine could be a weakened biological or synthetic agent administered to humans that will protect them from contracting infectious diseases by supplying specific antibodies to neutralise the disease-causing pathogen, while not making a person actually sick from it.
- Vaccines have played an important role in the reduction of communicable diseases from the second half of the 20th century.

#### Process of vaccine development:

- The general stages of the development cycle of a vaccine are: exploratory stage, pre-clinical stage, clinical development, regulatory review and approval, manufacturing and quality control.
- Two important steps that are typically needed before bringing a vaccine into clinical trials, involve the testing of the vaccine in appropriate animal models to see whether it is protective and testing the vaccines for toxicity in animals, e.g., in rabbits.
- Clinical development is a three-phase process.
  - \* During Phase I, small groups of people receive the trial vaccine.
  - \* In Phase II, the clinical study is expanded and the vaccine is given to people who have characteristics (such as age and physical health) similar to those for whom the new vaccine is intended.
  - \* In Phase III, the vaccine is given to thousands of people and tested for efficacy and safety.
- If a vaccine is approved by a licensing agency, then it can move into the manufacturing stage, but constant monitoring of the process and quality control measures must be put in place.

#### Vaccine development:

- With new infectious diseases emerging, particularly post the H1N1 influenza, global vaccine development activity has been happening at a comparatively fast pace.

- Vaccine technology has significantly evolved in the last decade, including the development of several RNA (ribonucleic acid) and DNA vaccine candidates, licensed vectored vaccines, recombinant protein vaccines and cell-culture-based vaccines.

#### **Details:**

- Current projections indicate that the Coronavirus is likely to become endemic and cause recurrent seasonal epidemics. In such a scenario, a vaccine will be the most effective tool to battle a virus the world is yet to fully understand.
- The COVID-19 pandemic has seen renewed efforts at a rapid vaccine development, and multiple candidates are at various levels of processing and in the trial stages.
  - \* Currently, the World Health Organization (WHO) site lists 10 vaccine candidates in clinical evaluation and 126 candidate vaccines in pre-clinical evaluation.
  - \* The 10 candidates in clinical evaluation, as per WHO's list, are based on five platforms — non-replicating coral vector, RNA, inactivated, protein sub-unit, and DNA.

#### **Challenges:**

Time consuming process:

- Despite the advances, including using artificial intelligence to determine potential vaccine candidates, the core principles of ensuring safety and efficacy of the vaccine for use in humans remain unchanged.
- While technology might have quickened some of the processes, the trials for the vaccine are time consuming.
- The development of vaccines for human use takes years normally. Many additional steps are needed before these vaccine candidates that have shown promise can be used in the population, and this process might take months, if not years.

Novel virus:

- The "SARS-CoV-2 Vaccines: Status Report" article notes the concerns in the development of a vaccine for the coronavirus. There are no existing vaccines or production processes for coronavirus vaccines.
- Because no coronavirus vaccines are on the market and no large-scale manufacturing capacity for these vaccines exists as yet, there is the need to build these processes and capacities. Doing this for the first time can be tedious and time-consuming.

Mutation:

- One of the major concerns for the development of an effective vaccine is the prospect of the virus mutating. This would render the vaccine under development ineffective against the mutated coronavirus.

Efficacy of vaccines:

- Infection with human coronaviruses does not always produce long-lived antibody responses, and re-infection, likely to be mild [symptoms] in a fraction of individuals, is possible after an extended period of time.

### **17. World Sickle Cell Day**

- It is a United Nations recognised day to raise awareness of sickle cell at a national and international level.
- In 2008, the United Nations General Assembly adopted a resolution that recognises sickle cell disease as a public health problem and "one of the world's foremost genetic diseases."
- The resolution calls for members to raise awareness of sickle cell on June 19th of each year at national and international level.

#### **Sickle Cell Disease (SCD)**

- It is a life threatening autosomal recessive genetic disorder resulting from inheritance of abnormal genes from both parents.
- Being an autosomal recessive disorder, abnormal beta globin gene from both mother and father are required to be inherited (homozygous) in offspring to cause SCD.
- If a person has only one abnormal beta globin gene inherited (heterozygous) either from mother or father, it is referred as sickle cell trait and are usually asymptomatic, but can pass the abnormal beta globin gene to their progeny

#### **What happens to RBC in this Disease?**

- Normal Red Blood Cells (RBCs) are biconcave disc shaped and move smoothly through the blood capillaries.
- The RBCs are produced in bone marrow and average life of normal RBCs is about 120 days.
- Biconcave disc shape of RBCs changes to sickle shape under low oxygen tension due to polymerization of faulty haemoglobin called HbS arising out of a point mutation in beta globin gene.
- The life span of RBCs in SCD patients is only about 10 to 20 days and the bone marrow can't replace them fast enough.
- As a result there is decrease in number of RBCs in the body and the RBCs don't contain sufficient amount of haemoglobin (hypochromia).
- In SCD the RBCs become sickle or crescent shaped which are stiff & sticky and tend to block the blood flow in small capillaries.

#### **The signs and symptoms of sickle cell disease are caused by the sickling of red blood cells**

- When red blood cells sickle, they break down prematurely, which can lead to anaemia.

- Anaemia can cause shortness of breath, fatigue, and delayed growth and development in children.
- The rapid breakdown of red blood cells may also cause yellowing of the eyes and skin, which are signs of jaundice.
- Painful episodes can occur when sickled red blood cells, which are stiff and inflexible, get stuck in small blood vessels.
- People with sickle cell are also at risk of complications like stroke, acute chest syndrome, blindness, bone damage and priapism.
- Mutations in the HBB gene cause sickle cell disease.
- Sickle cell is a genetic disease. Treatment of sickle cell mostly focuses on preventing and treating complications.

#### Treatment

- The Sickle cell anaemia has no available cure. However, treatments to improve the anaemia and lower complications can help with the symptoms and complications of the disease in both children and adults.
- Blood and marrow stem cell transplants may offer a cure for a small number of people.

### **18. Ayush Ministry lens on Baba Ramdev's COVID-19 cure**

#### Context

- Baba Ramdev unveiled an Ayurvedic medicine — 'Coronil and Swasari', claiming that clinical trials on COVID-19 affected patients had shown favorable results

#### Details

- The Central government asked Patanjali Ayurved Limited to stop advertising the drug and sought details on its claimed "successful trial and cure".
- Patanjali Ayurved has been asked to provide, at the earliest, details of the name and composition of the medicines being claimed as successful in COVID-19 treatment; site(s)/ hospital(s) where the research study was conducted; the protocol, sample size, Institutional Ethics Committee clearance, Clinical Trials Registry-India (CTRI) registration, and results data of the study.
- The advertising of Ayurvedic drugs is governed by a law that dates back to 1954 — the Drugs and Magic Remedies (Objectionable Advertisements) Act.

#### Concerns

- The company did not follow due processes before launching the "Corona Kit", which it advertised as a panacea for COVID-19 and at the same time the company's claim of a cure by all accounts was a clear subversion of the scientific process.
- In the absence of literacy, and in the presence of deeply rooted traditions and religion, a large chunk of the populace falls easily for magic and gimmickry.
- The absence of a scientific temper and the presence of a deeply religious society creates an appeal for magic and gimmickry

#### Way forward

- Drugs like these need to follow the protocols set by India's drug regulator, the Indian Council of Medical Research (ICMR), and the Union and state health ministries.
  - \* It is well within the domain of institutions of the ICMR or the CSIR or national science academies to call out a breach of due process in the appraisal of any drug, whether allopathic, ayurvedic or homeopathic. To not do so would amount to criminal negligence.
- Thus, more than the outcome, it is the method deployed that ought to be scrutinised by scientists to reinforce public trust in scientific assessment.

#### **Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954**

- The law seeks to prohibit advertisements for "remedies alleged to possess magic qualities".

#### Meaning

- Drug: A medicine for the internal or external use of human beings or animals;
- "Magic Remedy": It includes a talisman, mantra, kavacha, and any other charm of any kind which is alleged to possess miraculous powers for or in the diagnosis, cure, mitigation, treatment or prevention of any disease in human beings or animals or for affecting or influencing in any way the structure or any organic function of the body of human beings or animals
- "Advertisement": It includes any notice, circular, label, wrapper or other document, and any announcement made orally or by any means of producing or transmitting light, sound or smoke;
- Misleading Advertisements
  - \* (a) directly or indirectly gives a false impression regarding the true character of the drug; or
  - \* (b) makes a false claim for the drug; or
  - \* (c) is otherwise false or misleading in any material particular

#### **Penalty.—whoever contravenes any of the provisions of this Act**

- in the case of the first conviction, with imprisonment which may extend to six months, or with fine, or with both;
- in the case of a subsequent conviction, with imprisonment which may extend to one year, or with fine, or with both
- In case a company violates the provisions of the Act, every person who was in-charge of the company when the offence was committed shall be deemed to be guilty.
  - \* However, he could absolve himself if he shows that the offence was committed without his knowledge or



- \* if he can prove that he exercised all due diligence to prevent the offence from being committed.

### Examples from the past

- In 2016, the Maharashtra Medical Council of India had suspended for 3 months registrations of a Colaba-based doctor couple running an IVF clinic following complaints that they made promises of guaranteed pregnancy on their website and even offered refund if the treatment failed.
- In 2019, Travancore Cochin Medical Council had suspended for a month the registration of an Ayurvedic doctor after finding him guilty of violating the Act.
  - \* This was after the council received complaints about the doctor advertising the cure for various ailments through his treatment of “thulli marannu” (oral drops).

### Proposal to amend the law

- However, being a decades old law, it has often been criticised for not having kept pace with the changing time and technology.
- The Advertising Standards Council of India also reportedly aired its concerns, listing dozens of misleading advertisements that violate the 1954 law.
  - \* These advertisements have made claims related to asthma, cancer, diabetes, increased height, obesity and sexual performance, among other health and cosmetic conditions.

### **Randomised Controlled Trials (RCT)**

- They are prospective studies that measure the effectiveness of a new intervention or treatment.

### How does it work?

- As per definition, a randomised controlled trial, or RCT, is a study in which people are allocated at random, entirely by chance, to receive one of several clinical interventions. One of these interventions is the standard of comparison or control.
- The control may be standard practice/treatment options, a placebo (a drug without an active substance, or a ‘sugar pill’), or no intervention at all.
- The idea is to measure and compare the outcomes against the control after the participants receive the treatment.

A good RCT (for COVID-19) should enrol enough numbers, define clinical endpoints, including mortality and morbidity, also whether intubation was needed and days of stay in hospital.

- Researchers follow the groups over days, weeks, years and observe major clinical end points

### Advantages with RCT

- Randomization reduces bias. The act of randomization balances participant characteristics.

- \* Bias: systematic error in an epidemiological study that results in an incorrect estimate of the association between exposure and risk of disease

- Randomisation ensures the people in each group have a similar distribution of characteristics (Children and Adults cannot be compared) to make sure that the groups are comparable - so if one group has better outcomes than the other, it can be attributed to the interventions being tested.

### RCTs can have their drawbacks

- High cost in terms of time and money
- Participants that volunteer to participate might not be representative of the population being studied (immunity varies)
- Factors of Confounding may be ignored.
  - \* A study found alcohol consumption to be associated with the risk of Coronary Heart Disease. However, smoking may have confounded the association between alcohol and CHD

### Randomised Evaluation of Covid-19 Therapy (RECOVERY) trial

- The RECOVERY trial is the world's largest Randomised Clinical Trial (RCT) of potential COVID-19 treatments
- It aims to study the effectiveness of different drugs
- It is testing the effects of potential treatments for patients admitted to hospital with COVID-19.

## **19. Delhi belongs to all, Bajaj tells Sisodia at meeting on COVID-19**

### Context

- Delhi Chief Minister had recently said that, both state-run and private hospitals in Delhi would be reserved only for Delhiites till the Covid-19 crisis is over

### Details

- The decision was taken to solve the crisis over bed availability in the national capital.
- Health services for those suffering from Covid-19 will be provided only to those with proof of residence in the city.
- The order said only bonafide residents of NCT of Delhi would be admitted for treatment in these hospitals

### Who qualified as a 'bonafide resident' of Delhi?

The order lists out documents that could count as residence proof:

- Voter ID.
- Bank/Kisan/Post Office current passbook
- Patient Ration card/Passport/Driving Licence/Income Tax Return filed or Assessment Order.
- Latest water/telephone/electricity/gas connection bill for that address, either in the name of the patient or that of his/her immediate relations like parents, etc.



**Exceptions**

- According to the government order, “treatment relating to oncology, transplantation, and neuro-surgery shall continue for all patients irrespective of the place of residence.
- Also, any Medico-Legal victims of road accidents, acid-attack happening within NCT of Delhi will continue for all patients, irrespective of place of residence.”

**Lieutenant-Governor Anil Bajjal has issued an order overruling the decision**

- ‘Right to Health’ is an integral part of ‘Right to Life’ under Article 21 of the Constitution and this move has violated the constitutional rights of Equality under Article 14.
- Denying healthcare to someone on the grounds of residency is insensitive and irresponsible.
- It is the responsibility of the State to provide universal healthcare to all patients coming to hospitals in accordance with constitutional provisions

**Concerns**

- The NCT is functionally contiguous with Gurugram in Haryana and NOIDA in Uttar Pradesh. Thousands cross these borders for work and other needs including health care. People contribute to tax revenues in three different jurisdictions.

# SOCIAL ISSUES

## 1. Composite Regional Centres (CRC)

- CRCs are centres for persons with disabilities set up under the Ministry of Social Justice and Empowerment.
- They provide rehabilitation services for people with disabilities.
- Services include physical medicines, physiotherapy, occupational therapy, audiology and speech therapy, psychology, prosthetics and orthotics, special education, early intervention and treatment, etc.
- These centres also implement various schemes of the Department of Empowerment of Persons with Disabilities including skill development programmes.
- The targeted disabled persons include persons with low vision, blindness, mental retardation, locomotor disability, hearing impairment, mental illness, cerebral palsy, leprosy and autism spectrum disorder.

### Context

- Composite Regional Centre (CRC) – Ranchi inaugurated.

## 2. "Nasha Mukh Bharat: Annual Action Plan (2020-21)"

### Context

- It was e-launched by Minister of State for Social Justice and Empowerment on the occasion of "International Day Against Drug Abuse and Illicit Trafficking"

### Details

- Ministry of Social Justice and Empowerment is the nodal Ministry for drug demand reduction which coordinates and monitors all aspects of drug abuse prevention which include assessment of the extent of the problem, preventive action, treatment and rehabilitation of addicts, dissemination of information and public awareness.
- The Plan for 2020-21 would focus on 272 most affected districts
- It would be a three-pronged attack combining efforts of
  - \* Narcotics Bureau,
  - \* Outreach/Awareness by Social Justice and
  - \* Treatment through the Health Dept.

### The Action Plan has the following components:

- Awareness generation programmes;
- Focus on Higher Educational institutions, University Campuses and Schools;
- Community outreach and identification of dependent population;
- Focus on Treatment facilities in Hospital settings;

- Capacity Building Programmes for Service Provider.

## International Day against Drug Abuse and Illicit Trafficking

- It is observed on the 26th of June every year since 1989.
- The day is also meant to commemorate Lin Zexu's efforts towards the strategic dismantling of the opium trade in Humen, Guangdong in China right before the First Opium War on the Chinese Mainland.
- The theme of World Drug Day 2020 is Better Knowledge for Better Care.
- The International Day against Drug Abuse and illicit trafficking is used as a day to stimulate a sense of responsibility among people around the world, especially youngsters and teenagers.
- The UN with the aid of its anti-drug abuse arm, United Nations Office on Drugs and Crime (UNODC) spreads awareness, urges governments to avoid stimulating the Narco economy and deal with the Illicit trafficking of drugs in the disguise of legal pharmaceutical businesses.

## 3. PM SVANidhi

### Context

- The Ministry of Housing and Urban Affairs has launched a Special Micro-Credit Facility Scheme – PM SVANidhi – PM Street Vendor's AtmaNirbharNidhi, for providing affordable loans to street vendors.

### How to avail loan?

- The vendors can avail a working capital loan of up to Rs. 10,000, which is repayable in monthly instalments in the tenure of one year.
- On timely/early repayment of the loan, an interest subsidy @ 7% per annum will be credited to the bank accounts of beneficiaries through Direct Benefit Transfer on six monthly basis.
  - \* if the vendor repays the instalments on time or earlier, ministry will develop the credible credit score that makes him/her eligible for higher amount of term loan to 20 thousand rupees and so on

### Implementation

- Urban Local Bodies will play a pivotal role in the implementation of the scheme.
- It is for the first time that MFIs/NBFCs/SHG Banks have been allowed in a scheme for the urban poor due to their ground level presence and proximity to the urban poor including the street vendors.

- \* The lending institutions under the Scheme include Scheduled Commercial Banks, Regional Rural Banks, Small Finance Banks, Cooperative Banks, NBFCs, Micro Finance institutions and Self Help Group banks.
- A digital platform with web portal/mobile app is being developed to administer the scheme with end-to-end solution.
  - \* The IT platform will also help in integrating the vendors into the formal financial system.
  - \* This platform will integrate the web portal/mobile app with UdyamiMitra portal of SIDBI for credit management and PAiSA portal of MoHUA to administer interest subsidy automatically.

#### Significance

- The scheme is expected to help street vendors resume work and earn livelihoods in the light of the difficulties endured during the COVID-19 crisis and the lockdown.
- Over 50 lakh people, including vendors, hawkers, thelewalas, rehriwala, theliphadwala, etc. in different areas/contexts are likely to benefit from this scheme.
  - \* The goods supplied by them range from vegetables, fruits, ready-to-eat street foods, tea, pakodas, breads, eggs, textiles, apparel, footwear, artisan products, books/stationaries, etc.
  - \* The services include barber shops, cobblers, paan shops, laundry services, etc.
- This is for the first time in India's history that street vendors from peri-urban/rural areas have become beneficiaries of an urban livelihood programme.
- The street vendors mostly operate on a very small financial cushion, thus even the micro-credit support from the government is expected to give a major relief to such vendors.

#### **4. World Day against Child Labour**

- The World Day against Child Labour, held every year on June 12, is intended to foster the worldwide movement against child labour in any of its forms.
- It was first launched in 2002 to raise awareness and prevent child labour.
- The ILO, the United Nations body that works on global labour-related issues, launched the World Day against Child Labour to bring attention and join efforts to fight against child labour.
- This day brings together governments, local authorities, civil society and international, workers and employers organizations to point out the child labour problem and define the guidelines to help child labourers.
- The theme of World Day against Child Labour 2020 is 'Covid-19: Protect Children from Child Labour, now more than ever!'

#### Covid-19 and Child labour

- As countries around the world, including India, face a recession and witness massive job losses and crippling of the informal sector, families will get more and more desperate to bring money home.
- In such situations, it is likely that the children of the household will be forced into work as families would no longer be able to provide for them.
- Children, then, are at a greater risk of getting trapped in bonded labour.
- Unemployment, the closure of schools for extended periods and the return of many labourers to their villages will emerge as the biggest reason behind the anticipated increase in child labour in India.
- Additionally, school closures have also affected more than 33 crore students, according to UNESCO in India, many of whom were dependent on mid-day meals being served in their school for at least one meal a day.

#### **5. In the pandemic, the disabled remain an invisible minority**

##### Context

- Challenges faced by the disabled during the pandemic.

##### Challenges:

- The pandemic has various implications for people with disabilities.

##### Lack of employment opportunities:

- According to a report by the National Centre for the Promotion of Employment for Disabled Persons (NCPEDP), over 73% of people with disabilities surveyed faced serious difficulties in employment opportunities due to the lockdown.

##### Medical needs:

- People with disabilities have pre-existing medical conditions like MRSA [an infection], or have compromised spinal cords, which make them more susceptible to virus infection.
- The inaccessibility to healthcare because of the lockdown imposes a great challenge on the differently-abled owing to their medical conditions.
- There is lack of accessibility in the quarantine centres for the differently-abled people.

##### Negligence:

- The challenges faced by the differently-abled people point to a larger problem of invisibilisation of the struggles of persons with disability. People with disability have no representation in Parliament, hence, nobody cares to ensure the policies made for the differently-abled are intersectional in nature.
- Policies being framed seem to be oblivious to the needs of the specially-abled individuals.

- \* The increasing insistence on online education seems to be ignorant of the special needs of children with visual disorders or hearing disorders. There seems to be a lack of inclusiveness of people with disabilities in online education.
- \* Social distancing is not possible for those with disabilities. The concept of social distancing is redundant for differently-abled people who need assistance for their daily activities.

Class divide:

- A large class divide has become increasingly visible in the lockdown.
- Individuals with disability and their families are at a greater risk of poor health and quality of life outcomes because either their social status is affected by their disabilities or their disabilities are made worse by the inaccessibility that comes with social status.
- Lower income levels have been consistently correlated with poor health and inferior quality of life.

#### Way forward:

Immediate action:

- The government needs to step in with enhanced support for this vulnerable class of people. This could involve enhanced assistance for the differently-abled. Medical needs of this section should receive special attention. Policies being framed during the pandemic need to take into consideration the special needs.

Long term policy changes:

- There is a need for an interlinking of policymakers with disability as the focus. This could be done through the creation of Joint Secretary-level positions for disability affairs in the Health, Home and Information and Broadcasting Ministries.
- These officers would connect the department and concerned ministries; ensuring disability is not overlooked during policy formulation.

## **6. Maternal Health Matters**

### Context

- The article points to the death of a pregnant woman in Noida after being turned away from a number of private and government hospitals, raising questions about effectiveness of welfare measures for pregnant women and the state of maternal health in the country.

### Details:

- Over the last 15 years, the state has been promising maternal well-being to pregnant women provided they turn up at public hospitals during labour, and has been providing a cash incentive to those that have institutional birth.
- Consequently, it has become almost routine for all pregnant women to reach health facilities during labour.

- Elaborate tracking systems have been instituted by the Ministry of Health and Family Welfare to track every pregnant woman, infant and child until they turn five.

### Issues:

- However, during lockdown, the state appeared to have missed out on charting out plans to ensure the health and well-being of those women expected to give birth.
- Frontline workers were pressed into community surveillance, monitoring and awareness building for COVID-19.
- The public health system was overburdened with handling the pandemic: most secondary and tertiary hospitals were either those designated as COVID-19 facilities or those unequipped with enough PPE kits.
- Though pregnant women have been identified as people being 'high risk', reference on the need to provide emergency services for pregnant women was lacking.
- In 12 weeks (of lockdown), approximately 9,00,000 pregnant women (15% of the six million women giving birth) who needed critical care had to face enormous hurdles to actually obtain treatment at an appropriate hospital. Added to this were the women who have had miscarriages or sought abortions: another 45,000 women every single day.
- India's Maternal Mortality Ratio came down to 122 deaths per 1,00,000 live births (SRS 2017), from 167 per 1,00,000 births in 2011-13. Much effort and investment over many years have led to this decrease. As India struggles to manage the COVID-19 pandemic, the hard-won gains of the last 15 years can be erased with one stroke.

### Way forward:

Acknowledge the shortcomings of health care system:

- The health policymakers need to acknowledge the shortcoming of an overstretched and under-resourced system in responding to the critical care needs of pregnant women during crises.

Scrutinize the role of private sector:

- Although 80% doctors and 64% beds are in the private sector, clinics have closed down and private hospitals have stepped back fearing infections.
- Larger hospitals have begun charging exorbitant amounts.
- Therefore, the role of the private sector needs to be scrutinized.

Ensure transparency:

- In order to win back the trust of pregnant women, the state will have to account publicly for how the millions of deliveries took place; or how abortions, miscarriages and childbirth complications were handled.



**Conclusion:**

- Improved maternal health was the lynchpin around which public health systems had been strengthened over the last 15 years. As a part of the longer-term management strategy, it is time to consider doing things differently for improving maternal well-being.

**Fewer hospital-born babies as women fear virus****Background:**

- In Madhya Pradesh, institutional deliveries shot up to 90% in 2019, and were growing by 2-3% each year marking good improvement in institutional deliveries.

**Context:**

- The National Health Mission (NHM) data notes that Madhya Pradesh has recorded a fall of 18.6% in institutional deliveries in April 2020, the first month of the COVID-19 lockdown, casting a shadow on an improving trend.

**Concerns:****Medical Infrastructure:**

- Diversion of health infrastructure for the pandemic, including accredited social health activists and auxiliary nurse midwives, and the 108 ambulance service, and disrupted transport network has contributed to the decline in institutional deliveries.
- Many private health centres shut down during the lockdown further limiting the available health infrastructure.

**Fear of infection:**

- The pandemic inhibited people from visiting a health centre, fearing they would contract COVID-19.

**Effect on tribal population:**

- Witnessing fewer institutional deliveries, tribal districts, most of which have few private units and have low awareness levels, were the hardest hit regions with drastic drop in institutional deliveries.

**Steps taken:**

- The Madhya Pradesh state government has directed district hospitals in all the 52 districts to reserve at least 30% services for non-COVID-19 care and to continue emergency care.

**Way forward:**

- There is the need to strengthen primary and secondary-level health services essential to deliveries.
- The State should assume the predominant role in providing quality universal maternal and child health services without too much dependence on private health services.

# GEOGRAPHY

## 1. Amery Ice Shelf (AIS)

- The AIS is one of the largest glacier drainage basins in the world, located on the east coast of Antarctica



### Context:

- Major Impact on climate due to extension of Amery Ice Shelf (AIS), NCPOR study reveals.

### Details

- The National Centre for Polar and Ocean Research (NCPOR) predicts that there would be a 24% increase in the expansion of Amery Ice Shelf (AIS) boundaries by 2021 and another 24% expansion by 2026 from its 2016 positions.
- The prediction made by NCPOR is based on a 16-year-long satellite-based observation that covered an area of 60,000 sq. km across the AIS.

- Scientists feel that this study would help understand the ongoing changes in the ocean and atmospheric forces better.

### Ice Shelves

- The floating sheets of ice called 'ice shelves' play a multi-faceted role in maintaining the stability of a glacier. Ice shelves connect a glacier to the landmass.
- The ice sheet mass balance, sea stratification, and bottom water formation are important parameters for the balancing of a glacier.

### Inference

- The AIS dynamics and mass balance help in understanding the changes in the global climate scenario.
- It becomes clear from the study that the AIS is losing its stability owing to the impact of a downstream giant glacial drainage system over the past 19 years, thereby advancing the ice shelf boundaries due to higher freezing rates than basal melting.
- NCPOR observations also revealed a critical cooling of the sea surface temperature, resulting in an advancement of the ice shelf by 88 per cent in the past 15 years. These changes would contribute in a major way to climate variability.

### Calving Event

- When an iceberg breaks off an ice sheet it is known as a 'calving event'.
- Calving is an important process of mass loss for the world's ice sheets.

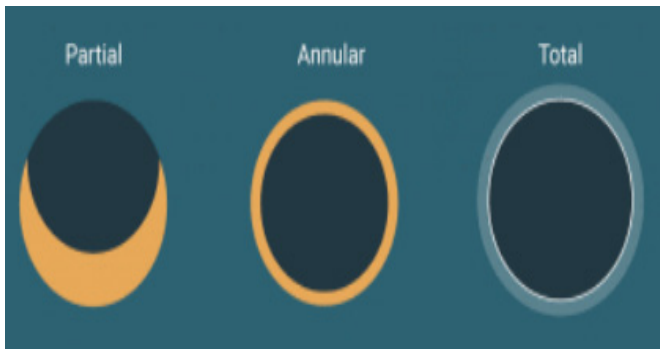
## 2. Annular Solar Eclipse

### What is an Eclipse?

- An eclipse happens when the moon while orbiting the Earth, comes in between the sun and the Earth, due to which the moon blocks the sun's light from reaching the Earth, causing an eclipse of the sun or a solar eclipse.

### Three types of eclipses

- Total Solar Eclipse-Moon completely covers the Sun.
  - \* It is visible only from a small area on Earth.
  - \* A total solar eclipse happens when the Sun, Moon and Earth are in a direct line.
- The second type of a solar eclipse is a partial solar eclipse, in which the shadow of the Moon appears on a small part of the Sun.
- The third kind is an Annular Solar Eclipse, which happens when the Moon is farthest from the Earth, which is why it seems smaller.
  - \* The Moon covers the centre of the Sun, giving the appearance of a bright ring.
  - \* The key difference between Annular and Total is that the Moon is further away from the Earth during an Annular as compared to a Total Eclipse.
  - \* There are no annular lunar eclipses because Earth is much bigger than the Moon, and its shadow will never be small enough to leave a ring.



### Shadows

During a solar eclipse, the Moon casts two shadows on the Earth:

- The first one is called the umbra, which gets smaller as it reaches the Earth.
- The second one is called the penumbra, which gets larger as it reaches the Earth.

### Is it safe to view solar eclipses?

- NASA maintains that the Sun can be viewed safely using the naked eye only during a total eclipse, while during partial and annular solar eclipses, the Sun should not be viewed without proper equipment and techniques.
- Not using proper methods and equipment for viewing can cause permanent eye damage or severe visual loss, it says.
- Safety equipment includes eclipse glasses and using appropriate solar filters for covering binoculars, telescopes and cameras.

### 3. Cyclone Nisarga

- Cyclone Nisarga is a tropical cyclone formed because of exceptional warm ocean temperatures.
- The Nisarga Cyclone was formed because of the depression in the Arabian Sea.
- The name Nisarga was suggested by Bangladesh.

### Tropical Cyclones in the Arabian Sea

- The cyclones are less frequent in the Arabian Sea compared to the frequency of cyclones originating in the Bay of Bengal
- The cyclones originating in the Arabian Sea are weaker than those originating from Bay of Bengal
- The formation of weak cyclones in Arabian Sea reasons back to the presence of cold water of the sea.
- The important cyclones that have originated in the Arabian Sea are:
  - \* Vayu – Very Severe Cyclonic Storm in June 2019 affected India, Pakistan, Maldives, and Oman
  - \* Hikka – Cyclonic Storm in September 2019
  - \* Kyarr – First super cyclonic storm in the North Indian Ocean since Gonu in 2007, in October 2019
  - \* Maha – The cyclonic storm in November 2019
  - \* Pavan – Cyclone storm in December 2019.

### 4. Earthquake prone areas in India

#### Context:

- This article analyzes India's vulnerability to earthquakes and suggests measures for better resilience to earthquakes.

#### India's Vulnerability:

- The fact that the Indian plate is pushing against the Eurasian plate makes cities, towns and villages in and around the Himalayas vulnerable to earthquakes.
- Major earthquakes in India:
  - \* Latur (1993)
  - \* Kutch (2001)
  - \* Jammu and Kashmir (2005)

#### Steps taken:

- India has a sophisticated set of monitors embedded beneath the soil's surface in many vulnerable points. This provides an opportunity to better understand the seismic activity and further research in this domain.
- India also has collaborations with other countries in the field of seismic research.

#### Predicting Earthquakes:

- Recent studies have thrown light on earthquake prediction.

- Many small tremors are witnessed on a frequent basis which are only recorded on the seismometers. The behaviour, frequency and the velocity of these small tremors can help predict the occurrence of a larger earthquake.

#### Way forward:

- India needs to be alert to the threat of earthquakes. India needs to undertake short-, medium- and long-term actions.
  - \* The short term actions would involve identifying vulnerable buildings and planning for their occupants' safety.
  - \* The medium term actions could involve mandating a new earthquake proof architecture regime in earthquake prone areas for all builders and developers. This would help reduce the destruction and devastation caused by the earthquakes.
  - \* The long-term actions could involve the following measures.
    - \* 1. There is a need to decongest the cities which are most prone to earthquakes. This could remove the threat posed by the high density areas, vulnerable heights, clogged accesses in congested cities.
    - \* 2. There is a need to regulate high-rise constructions in zones of high vulnerability like Delhi and hill stations.
    - \* 3. There needs to be seismic planning for all major infrastructure and construction projects which could help lessen the impact of the earthquakes.

### **5. Extreme Helium Star**

- An extreme helium star or EHe is a low-mass supergiant that is almost devoid of hydrogen, the most common chemical element of the universe.
- There are 21 of them detected so far in our galaxy.
- The origin and evolution of these Hydrogen deficient objects have been shrouded in mystery.
- Their severe chemical peculiarities challenge the theory of well-accepted stellar evolution as the observed chemical composition of these stars do not match with that predicted for low mass evolved stars.

#### Context:

- A study by the Indian Institute of Astrophysics (IIA), an autonomous institute of the DST, which detected the presence of singly ionised fluorine for the first time in the atmospheres of hot Extreme Helium Stars makes a strong case that the main formation of these objects involves a merger of a carbon-oxygen (CO) and a Helium (He) white dwarf.

### **6. Great Oxidation Event (GOE)**

- It was an event 2.4 billion years ago which caused steep increase in atmospheric oxygen.
- Cyanobacteria belong to Earth's oldest organisms. They are still present today in oceans and waters and even in hot springs.
- By producing oxygen, they played a key role in the emergence of organisms that breathe oxygen

#### Extinction of lives

- The increased production of oxygen set Earth's original atmosphere off balance.
- Because oxygen was poisonous for large numbers of anaerobic organisms, many anaerobic types of bacteria were eliminated

#### Lack of scientific consensus

- Cyanobacteria may have played a role, but the GOE was so dramatic — oxygen concentration increased as much as 10,000 times — that cyanobacteria by themselves could not account for it. Thus, there's no scientific consensus about what caused the GOE.

#### Context

- A recent study notes the importance of volcanic activity as a key factor behind the increased concentration of oxygen in the atmosphere through the degassing process.

#### Details

- Degassing is the liberation of gases from within a planet, and it may occur directly during volcanism or indirectly by the weathering of igneous rocks on a planetary surface. For the Earth, volcanism appears to be most important both in terms of current degassing rates and calculated past rates.
- The study claims that the mantle's evolution could have possibly controlled the evolution of life with its contribution to the oxygen concentration in the atmosphere.

### **7. Indus River**

#### Context:

- Researchers from Wadia Institute of Himalayan Geology (WIHG), Dehradun, an autonomous institute under the Department of Science and Technology, Govt. of India, have traced the paleoclimatic history of the Indus River in Ladakh Himalaya with the help of geometric data from overlapping gravels of channel fills.

#### Paleoclimatology

- It is the study of Earth's past climate using geologic and biologic evidence (climate proxies) preserved in sediments, rocks, tree rings, corals, ice sheets, and other climate archives to reconstruct past climate in terrestrial and aquatic environments around the world.



**River Terraces**

- They are ubiquitous in mountains that nourish and help sustain past, present, and future human societies.
- These terraces are part of valley-wide aggradations, which has been studied extensively in Himalaya to understand the processes driving such a periodic increase in river valley land elevation and incision.
- Scientists are still debating whether wetter climate intervals with increased rainfall and glacial melting promote river aggradation through increased discharge and enhanced sediment load, or instead, is it during drier conditions when aggradation occurs through increased sediment to water ratio

**Aggradation**

- It is the term used in geology for the increase in land elevation, typically in a river system, due to the deposition of sediment.

**Results from the study**

- They observed that the aggradation in the Himalayan rivers occurred in glacial-interglacial transient warm climatic conditions (33–21 ka and 17–14 ka) when the sediment budget in the rivers increased just after the glacial events.
- Aggradation took place in the Indus River when sediment to water ratio was higher during Marine Isotope Stages (MIS)-3
  - \* The Marine Oxygen-Isotope Stages, are alternating warm and cool periods in the Earth's paleoclimate, deduced from oxygen isotope data reflecting changes in temperature derived from data from deep-sea core samples) and incision initiated when sediment to water ratio reduced during post-glacial climatically wet phase (early Holocene).

**8. Last Glacial Maximum**

- It was a period (19,000-21,000 years ago) during which ice sheets were at their greatest extent.
- Vast ice sheets covered much of North America, Northern Europe, and Asia

**Impact on the World**

- During the Last Glacial Maximum, much of the world was cold, dry, and inhospitable, with frequent storms and a dust-laden atmosphere
- This was probably due to a number of factors: reduced vegetation, stronger global winds, and less precipitation
- The massive sheets of ice locked away water, lowering the sea level

**9. Lonar Lake**

- Lonar Lake was created by an asteroid collision with earth impact during the Pleistocene Epoch some 50,000 years ago.

- It is one of the four known, hyper-velocity, impact craters in basaltic rock anywhere on Earth. The other three basaltic impact structures are in southern Brazil.
- Lonar Lake has a mean diameter of 1.2 kilometres.
- Lonar Lake has saline water and is a notified national geo-heritage monument.

**Context:**

- Lonar Lake turns pink

**Possible Reasons**

- It is generally attributed to algal bloom in the lake
- The lake, which is a notified national geo-heritage monument has saline water with a pH of 10.5
- The salinity and algae can be responsible for this change
- Level of water in the Lonar Lake is currently low as compared to the few past years and there is no rain to pour fresh water in it.
  - \* The low level of water may lead to increased salinity and change in the behaviour of algae because of atmospheric changes...this may be the reason for colour change.

**10. Panchganga River**

- It is one of the important rivers located in Maharashtra
- The name translates as "Five Rivers"
  - \* The Panchganga is formed, by four streams, the Kasari, the Kumbhi, the Tulsi and the Bhogawati.
- It is a major tributary of Krishna River

**11. Vamsadhara River**

- Vamsadhara River is an important east flowing river between Rushikulya and Godavari, in Odisha and Andhra Pradesh states in India.
- The river originates in Odisha and runs for a distance of about 254 kilometers and joins the Bay of Bengal at Kalingapatnam, Andhra Pradesh.
- Mahendratnaya River is a major tributary river of Vamsadhara.

**12. Cyclone brewing in Arabian Sea****Context:**

- The India Meteorological Department (IMD) had forecast a cyclone in the Arabian Sea which was likely to move towards Gujarat and Maharashtra

**Concerns**

Such storms are common during the months of May and June, but their path can have a bearing on the progress of the monsoon. It usually halts the northward progression of the monsoon.

- Presence of low-pressure areas, when they develop near or over land, are instrumental in pulling the monsoon winds over the country.

- But when the low-pressure area is at the centre of the cyclone, it is far more powerful than any local system that can pull the monsoon winds.
  - \* The cyclone is expected to interfere with normal progression, by sucking all the moisture from the monsoon winds towards itself.
  - \* Cyclones are sustained by very strong low-pressure areas at their core. Winds in surrounding areas are forced to rush towards these low-pressure areas.

#### **Impact**

- We might see a brief pause in the monsoon progression because of the cyclone.
- The northward progress, especially in interior areas, would not be possible till the cyclone dissipates.
- What this means is that the places where the monsoon has already reached would continue to get rain, mainly along the western coastline, but other areas would have to wait a little longer.

#### **Example**

- In 2019 cyclone Vayu that formed in the Arabian sea stalled the monsoon

### **13. Stellar evolution in the Milky Way Galaxy**

#### **Context:**

- Study showing stars of varied ages can co-exist in open clusters, provides clue to stellar evolution in the Milky Way Galaxy.

#### **Details:**

- Stars in the Milky Way Galaxy are formed from the molecular clouds present in the galaxy.
- Star clusters are important clues to understand the mechanism of star formation because it is believed that a majority of stars in the Milky Way are formed in star clusters.
  - \* Star clusters are groups of stars which are gravitationally bound.
  - \* Open star clusters are a system of stars bound by gravity in which stars are born from the same molecular clouds.
  - \* All the stars in a cluster follow the evolutionary sequence as per their initial masses at the time of formation of these stars.
  - \* Open clusters are also important in probing the formation and evolution of the Milky Way Galaxy as they are distributed throughout the Galactic disk.
  - \* Astronomers at the Aryabhata Research Institute of Observational Sciences (ARIES), an autonomous science institute under the Department of Science and Technology (DST) Govt. of India, have found that stars of varied ages can co-exist in open clusters. This challenges earlier understanding that stars in an open cluster have the same age.

- \* The scientists measured the light from three poorly studied open clusters NGC 381, NGC 2360, and Berkeley 68 (observed using the 1.3-m telescope at Devasthal Observatory situated in Nainital) for studying the evolution of stars in these clusters.
- \* 1. They found two different stellar evolutionary sequences in the cluster NGC 2360, which has been observed in very few open clusters in the Milky Way Galaxy until now.
- \* Other than the stellar evolution, the researchers also studied the dynamical evolution of these clusters for the first time.
- \* 1. The mass distributions of stars belonging to the clusters have shown the preferential distribution of massive stars in the inner part of the clusters while low mass stars are found towards outer region of the clusters.
- \* It is believed that some of the very low mass stars have in fact, left their parent clusters and may be roaming as a free star like our own Sun.
- \* Their study lent important insight about the stellar and dynamical evolution of these clusters.

### **14. Blazars**

#### **Context:**

- Study of optical properties of super-massive black-holes can provide clues to emission mechanism from its close vicinity.

#### **About the Study:**

- Scientists from nine countries in Asia and Europe observed changes in a very high energy gamma-ray emitting blazar '1ES 0806+524'.
- The study was conducted by taking 2263 image frames and observing the changes through 153 nights.
- The images were taken by seven optical telescopes in Europe and Asia.

#### **What is a Blazar?**

- A blazar is a feeding super-massive black-hole (SMBH) in the heart of a distant galaxy that produces a high-energy jet viewed face-on from Earth.
- Blazars are one of the most luminous and energetic objects in the known universe with a jet composed of ionized matter traveling at nearly the speed of light directed very nearly towards an observer.
- Relativistic beaming of electromagnetic radiation from the jet makes blazars appear much brighter than they would be if the jet were pointed in a direction away from Earth.
- Blazars are powerful sources of emission across the electromagnetic spectrum and are observed to be sources of high-energy gamma ray photons.
- Blazars are important topics of research in astronomy and high-energy astrophysics.

\* They are among one of the most favourite astronomical transient objects because they emit radiation in the complete EM spectrum, and their flux and polarization are highly variable.

- To explain it in simple words, blazars are the same as quasars, but pointed at a different angle.

#### **What are quasars?**

- At the centre of most galaxies, there's a gargantuan black hole that can have the mass of millions or even billions of Suns.
- In some galaxies, this supermassive black hole may collect a swirling disk of gas, dust and stellar debris around it to eat from.
- As material in the disk falls towards the black hole, its gravitational energy can be converted to light, making the centres of these galaxies very bright and giving them the name Active Galactic Nuclei (AGN).
- Some of these active galactic nuclei also shoot out colossal jets of material that travel close to the speed of light, called quasars.
- When the galaxy happens to be oriented so that the jet points towards the earth, it's called a blazar.

# EDUCATION

## 1. Global Education Monitoring (GEM) Report

### Context

- According to a UNESCO's 2020 Global Education Monitoring (GEM) Report, COVID-19 pandemic has exacerbated inequalities in education systems across the world.

### Details

- Developed by an independent team and published by UNESCO, the Education For All Global Monitoring Report published from 2002–2015, aimed to sustain commitment towards Education for All.
  - \* It published 12 Reports from 2002 until 2015.
  - \* It was then renamed, and re-launched under a new mandate as the Global Education Monitoring (GEM) Report, UNESCO, whose principal role is to monitor progress towards the education targets in the 2030 Sustainable Development Agenda.
- In line with its mandate, the 2020 GEM Report assesses progress towards Sustainable Development Goal 4 (SDG 4) on education and its ten targets, as well as other related education targets in the SDG agenda.
- The Report also addresses inclusion in education, drawing attention to all those excluded from education, because of background or ability.
- The Report is motivated by the call to ensure an inclusive and equitable quality education in the formulation of SDG 4, the global goal for education.
- The Report also explores the challenges holding the world back from achieving this vision and demonstrates concrete policy examples from countries managing to tackle them with success.
  - \* These include differing understandings of the word inclusion, lack of teacher support, absence of data on those excluded from education, inappropriate infrastructure, persistence of parallel systems and special schools, lack of political will and community support, untargeted finance, uncoordinated governance, multiple but inconsistent laws, and policies that are not being followed through.

### Findings of the report:

- About 40% of low- and lower-middle-income countries have not supported learners at risk of exclusion during this crisis, such as the poor, linguistic minorities and learners with disabilities.
- The report noted that efforts to maintain learning continuity during the pandemic may have actually worsened exclusion trends.

- During the height of school closures in April 2020, almost 91% of students around the world were out of school.
- While India has also used distance learning solutions for educational continuity, the digital divide lays bare the limitations of this approach.
- School closures have also interrupted support mechanisms from which many disadvantaged learners benefit.
  - \* For poor students who depend on school for free meals or even free sanitary napkins, closures have been a major blow.
- The report highlighted that, cancellation of examinations in many countries, including India, may result in scoring dependent on teachers' judgement of students instead, which could be affected by stereotypes of certain types of students.
- Higher drop-out rates are also a concern.
  - \* During an earlier Ebola epidemic in Africa, many older girls never returned to school once the crisis was over.

### Conclusion:

- In order to combat the situation, 17% of low and middle-income countries are planning to recruit more teachers, 22% to increase class time and 68% to introduce remedial classes when schools reopen. However, how such classes are planned and targeted will be critical to whether disadvantaged students can catch up.

## 2. National Institutes of Pharmaceutical Education and Research (NIPERs)

- Government of India has declared NIPER as an 'Institute of National Importance'.
- It is an autonomous body set up under the aegis of Department of Pharmaceuticals, Ministry of Chemicals and Fertilizers
- The Institute is conceived to provide leadership in pharmaceutical sciences and related areas not only within the country, but also to the countries in South East Asia, South Asia and Africa.
- NIPER is a member of Association of Indian Universities and Association of Commonwealth Universities.

### Vision

- "To become a globally recognized brand in the areas of education and research in pharmaceutical sciences for the benefit of people of India and other countries and the growth of the pharmaceutical industry."



### Thrust Areas of Research

The following thrust areas have been identified for research at the Institute:

- Tuberculosis
- Malaria
- Diabetes
- Leishmaniasis
- Immunomodulation

### **3. STARS project**

- The World Bank's Strengthening Teaching-Learning and Results for States Program (STARS) aims to improve the quality and governance of school education in six Indian states.
- The project will be implemented through the Samagra Shiksha Abhiyan, the flagship central scheme, in partnership with Himachal Pradesh, Kerala, Madhya Pradesh, Maharashtra, Odisha and Rajasthan.
- Despite India's significant strides in improving access to education across the country, the learning outcomes of students across all age groups continue to remain below par. STARS will support India's renewed focus on addressing the 'learning outcome' challenge and help students better prepare for the jobs of the future – through a series of reform initiatives. These include:
  - \* Focusing more directly on the delivery of education services at the state, district and sub-district levels by providing customized local-level solutions towards school improvement. This will help strengthen governance and decentralize management.
  - \* The program will support individualized, needs-based training for teachers that will give them an opportunity to have a say in shaping training programs and making them relevant to their teaching needs.
  - \* Investing more in developing India's human capital needs by strengthening foundational learning for children in classes 1 to 3 and preparing them with the cognitive, socio-behavioral and language skills to meet future labour market needs.

### **4. Streamed education is diluted education**

#### Context

- The circular issued by the University Grants Commission with respect to online education.

#### Background:

- Recently, in the wake of the COVID-19 pandemic, the University Grants Commission had issued a circular to universities encouraging them to adopt Massive Open Online Courses (MOOCs) offered on its SWAYAM platform for credit transfers in the coming semesters.

### Concerns:

- Though the UGC circular is aimed at easing the pressures during the national lockdown, the online system of education leads to dilution of the meaning of education and expresses several concerns regarding the same.

#### Policy provisions:

- The policymakers behind the SWAYAM platform have left out courses in engineering, medicine, dental, pharmacy, nursing, architecture, agriculture, and physiotherapy on the grounds that they involve laboratory and practical work.
- Although this move makes sense, it seems to suggest that the pure sciences, the arts, the social sciences, and humanities curricula are largely lecture- and theory-based, and, therefore, readily adaptable to the online platform. This amounts to a gross misconception of the idea of education.

#### Gross Enrolment Ratio target:

- The above step is viewed as an attempt to achieve the country's target Gross Enrolment Ratio (GER) in higher education (envisioned to be 30% by 2021; it was 25.8% in 2017–18).
- Instead of expanding the network of higher educational institutions across the country and increasing seats, the government plans to make online degree programmes available for students to enroll and graduate from and add to GER.
- This approach seems like blind fixation on target achievement rather than taking measures meant to truly empower the individual through education.

#### Hands on experience:

- In education, the classroom acts as a space where skills such as dialogue, debate, disagreement, and friendship are learnt and practised. The classrooms act as a laboratory for hands-on testing of ideas, opinions, interpretations, and counterarguments.
- A diverse and inclusive classroom exposes to the actual world a child would be exposed to when he/she grows up.

#### Social values:

- Classroom and campus spaces offer the potential for solidarity in the face of discrimination, social anxiety, and stage fear, paving the way for a proliferation of voluntary associations that lie outside the realm of family, economy, and state.

#### Education as an economic good/service:

- The online education model envisages education as a combination of content and consumption model.
- In the absence of the physical space of a classroom, teaching and learning would give way to mere content and its consumption.

- Without a shared space to discuss and contest ideas, learning dilutes to just gathering more information.
- This goes against the very idea of education and can also lead to low learning outcomes in the students.

Lack of improvement:

- MOOC-based e-learning platforms tend to reinforce a top-down teacher-to-student directionality of learning whereby the teacher 'creates' and the student 'consumes'. This misses the point that teaching and learning are skills that are always in the making.
- The interaction between the students and teachers helps the teacher facilitate the birth of students' ideas and insights through engaging in critical dialogue. The students also help a teacher develop new ideas.
- Moving to a MOOC-based degree system would rob young teachers and students of these essential lessons in teaching and learning from each other.

#### **Way forward:**

- The online education systems being propounded must be seen only as stop-gap variants that help us get by under lockdown situations and complement classroom lectures. It could add value only as an addendum to the classroom.
- There is the need to think of greater value-sensitive and socially just architectures and technologies that further foster classroom engagement and make it accessible for students of various disabilities and challenges, thereby adding more value to the existing meaning of education.

### **5. Waiting for a faint signal from a distant tower**

#### **Context**

- The article discusses the challenges associated with online classes for the Northeast Indian region.

#### **Background:**

- Educational institutions across the country have switched to online classes to make up for the time millions of students have lost during the COVID-19 lockdown.

#### **Concerns:**

- Students across large swathes of the Northeast are facing many challenges in accessing online classes.

Connectivity issues:

- A large majority of the students are situated in far-flung areas without telecom connectivity or with very poor quality connectivity.
- Hence online classes are not a solution for the region unless the mobile phone or broadband connectivity is made robust.
- One of the reasons for the poor connectivity is the reluctance of telecom service providers to provide connectivity in areas where the prospective customer base is low

Electricity:

- A bigger challenge is to provide electricity for charging phones and gadgets to facilitate online or distant learning in the region.
- Connecting the sparsely populated and scattered villages high in the mountains to the electricity would involve substantial investments.

Economic challenges:

- The parents of only a few students have smartphones while many don't own a phone.
- Those who have internet connectivity would rather not sacrifice their limited data pack on online classes.
- Recharging for parents beyond the basic need to talk is taxing on the lower middle class, not to speak of those economically weaker.

Limited coverage:

- Recent studies have noted that not more than 20% of the students have been covered under the online education scheme.
- This would only widen the existing gap between the haves and have-nots in society.

One-way communication:

- The schools seem to be in a hurry to finish the classes through WhatsApp groups comprising the students of a class and some teachers. But the communication is one way as only the teachers can post as the administrators.

#### **Government plans and schemes:**

- The National e-Governance Conference organised in Shillong in 2019 ended in the Shillong Declaration that "binds the government to improve connectivity in the north-eastern States by addressing issues of telecommunications connectivity at grass-root level and formulating and implementing a comprehensive telecom development plan".

\* This was seen as a follow-up of the Comprehensive Telecom Development Plan for North East Region that the Centre had in 2018 said was being finalised through the Universal Service Obligation Fund (USOF).

- Under the plan, a private service provider was entrusted to set up more than 2,000 mobile towers for connecting 2,128 uncovered villages in Manipur, Mizoram, Nagaland, Sikkim, Tripura, parts of Assam and the national highways in the region.

#### **Way forward:**

- The lockdown and associated difficulties in conducting online classes could be a lesson for the government in terms of adding subsidised smartphones to its beneficiary programmes, particularly for the poor with school going children as a way of discouraging them from dropping out.

- There is a need to expedite the infrastructure projects to ensure digital connectivity and reliable electricity for the region.

## 6. The pandemic imposes a steep learning curve

### Context:

- Across the world, education has been drastically affected by COVID-19 pandemic. Most instruction has moved online. Higher education has either gone digital or has simply been put on hold.

### Issue:

- In the wake of the pandemic, other countries have embraced online education with mixed enthusiasm.
- At the same time, educationists and policymakers advise caution.
- Online education has not lived up to its potential.

### India's Response:

- Given the diversity in institutions of higher education, the Indian education system has had a very heterogeneous response to the pandemic.
- The reactions also reflect the contrast in rural versus urban infrastructure, the variable quality of staff, and the diverse types of subjects that are taught.

Serious long term effects can be expected considering the scale of the social, political and economic changes that have been occurring these past several months.

### Switch to online education:

- From a purely pedagogic point of view, it is clear that technology will play a bigger role in education in the coming years.
- However, for courses that traditionally need a laboratory or practical component, online classes cannot offer an alternative.
- Considering a huge digital divide in the country, adoption or integration of technology in education also depends on the specific institution and its location.

### Challenges:

Impact on academic research:

- Beyond classroom lectures and courses, there has been a serious impact on academic research in all disciplines.
- There is need for close personal interaction and discussion in research supervision.
- It is not clear when and how doctoral research and supervision can resume.
- The related economic crisis has consequences for funding, both of research as well as for the maintenance of research infrastructure. These are very long-term effects.

Digital divide:

- Not all students have equal access to the Internet.

- Lack of the required combination of hardware and electrical connectivity at homes is more pronounced in rural areas and non-metro cities, and for lower income groups as well.

Online teaching:

- Most teachers in India view online instruction with caution.
- The shift online is in response to a crisis and was poorly planned.
- Online teaching is a separate didactic genre in itself — one that requires investment of time and resources that very few teachers could come up with, in a hurry.
- Many online classes are poorly executed video versions of regular classroom lectures. Across the board, teachers recognise this as unsatisfactory.

### Opportunity for Change:

- This is a chance to re-imagine higher education in India. For long this has been elitist and exclusionary; education has been less about learning and more about acquiring degrees. Now, higher education system can be made more inclusive.
- There is a positive aspect of even a partial move to online education: making lectures available online in public and open websites accelerates democratisation of knowledge and wide distribution of learning opportunities.
- If going online loses the human touch, the advantage of becoming available to many more people who aspire to learn is worth the trade.

### Way forward:

Massive Open Online Classrooms:

- Online higher education using massive open online classrooms (MOOCs) has been encouraged by the Ministry of Human Resource Development for some time now via the National Programme on Technology Enhanced Learning (NPTEL) and SWAYAM platforms. (SWAYAM is a Hindi acronym for "Study Webs of Active-Learning for Young Aspiring Minds")
  - \* These are presently used to augment classroom instruction but if these can be taken for credit, it may help address the question of access to quality education.
- If this is to make a serious difference, both the quality and quantity of online courses need to be enhanced.

Revamping examinations:

- If giving proctored examinations in a socially distanced world is more difficult, what needs to change is the idea of proctored examinations.
- There are simpler ways to validate pedagogy, some of which can be found in our own traditions.
  - \* For instance, Gandhiji's "Nai Talim" put a high premium on self study and experiential learning.

Digital tools in teaching:

- With planning, significant qualitative changes can be brought about.
- Digital tools such as artificial intelligence (AI) — already used in teaching language — can be adapted to deliver personalised instruction based on the learning needs for each student.
- The use of AI can improve learning outcomes; in particular, this can be a boon for teaching students who are differently-abled.

Role of state:

- Pedagogic material must be made available in national languages; this will extend access, and can help overcome staff shortages that plague remote institutions.
- The state will have to bear much of the responsibility:
  - \* To improve digital infrastructure.
  - \* To ensure that every needy student has access to a laptop or smartphone.

**Conclusion:**

- The adoption of online education needs to be done with sensitivity.
- Imagination and a commitment to decentralisation in education is the need of the hour.
- In the future, blended modes of education will be unavoidable: online instruction where possible, and limited contact for laboratory instruction and individual mentoring.
- If this can lead to the emergence of a new pedagogic paradigm, India would have made the sweetest use of this adversity.

# HISTORY

## 1. **Malabar Rebellion**

### Context

- The recent controversy in Kerala over the making of a film on Variyamkunnath Kunhamed Haji.

### Details:

- The Malabar Rebellion (also called the Mappila or Moplah Rebellion by the British) broke out in the southern taluks of Malabar in August 1921. It largely took the shape of guerrilla-type attacks on janmis (feudal landlords, who were mostly upper-caste Hindus) and the police and troops.
- Mappilas had been among the victims of oppressive agrarian relations protected by the British. The political mobilisation of Muslims in the region in the aftermath of the launch of the Khilafat agitation served as an opportunity for an extremist section to invoke a religious idiom to express their suffering, while working for a change in the system of administration.
- The leaders of the movement sought to link their sense of local injustice with the pan-Islamic sentiments created in the aftermath of the collapse of the Ottoman Empire.
- Variyamkunnath Kunhamed Haji was the main protagonist of the Malabar Rebellion of 1921 who was executed by the British.

### Negative impact of the protests:

- The rebellion of Mappilas inspired by religious ideology and a conception of an alternative system of administration — a Khilafat government — dealt a blow to the nationalist movement in Malabar. The fanaticism of rebels fostered communal rift and enmity towards the Congress.
- The exaggerated accounts of the rebellion engendered a counter-campaign in other parts of the country against the alleged ‘fanaticism’ of Muslims.

## 2. **Victory Day in Russia**

- Victory Day is a holiday in Russia that commemorates the surrender of Nazi Germany in 1945, after the Second World War.
- Many other countries, particularly, of the former USSR, also celebrate May 9 as Victory Day commemorating the signing of the German Instrument of Surrender.
- ‘Victory in Europe Day’ is observed a day earlier, on 8 May, in many other countries in Europe.



# DISASTER MANAGEMENT

## 1. Assam Gas Leak

### Context

- An oil-and-gas well, owned by OIL, at Upper Assam's Baghjan village caught fire

### Where is the oil rig?

- The Baghjan well is a purely gas-producing well in Tinsukia district, and is at an aerial distance of 900 metres from the Dibru-Saikhowa National Park. It was drilled by Oil India Limited (OIL) in 2006.
- It produces around 80,000 Standard Cubic Metres per Day (SCMD) of gas from a depth of 3,870 metres.
- As per officials, the current discharge is at 90,000 SCMD at a pressure of 4,200 PSI, far higher than the normal producing pressure of around 2,700 PSI.

### Blowout

- It is the uncontrolled release of crude oil and/or natural gas from an oil well or gas well after pressure control systems have failed.
  - \* When crude oil or natural gas is released uncontrollably and accidentally from the well.

### Oil rig

- It is any kind of apparatus constructed for oil drilling.

### Why do blowouts happen?

- Sometimes, the pressure balance in a well may be disturbed leading to 'kicks' or changes in pressure (Pressure imbalance). If these are not controlled in time, the 'kicks' can turn into a sudden blowout.
- Possible reasons behind blowouts include simple lack of attention, poor workmanship, bad maintenance, old age of the equipments.
- A device called a blowout preventer is usually installed in wells.

### What lead to the leak?

- The gas well at Baghjan was being serviced and the blowout preventer was also removed.
- Since they were in the process of repairing the well-head, suddenly gas started to ooze out of the exposed well. Before anyone could do anything, it broke through our cement barrier

### Why is it so difficult to control?

- The control of a blowout depends on two things: the size of the reservoir and the pressure at which the gas/oil is flowing out
- While many blowouts automatically collapse on their own, it can take up to months. To control a blowout, the first step is to pump in water, so that the gas does not catch fire.

### Impact

- The gas well is close to the Dibru Saikhowa National Park, the Maguri-Motapung wetlands, and the forest villages of Barekuri which are habitat to the hoolock gibbon. It has caused extensive damage to biodiversity and wildlife in the region.
- Variety of fish and an endangered Gangetic dolphin have died.
- Paddy fields, ponds and wetlands in the adjoining villages have also been contaminated and the threat is growing with every passing day.
- Several small tea growers in the area have also complained about layers of gas condensates in their tea gardens.
- At least 6,000 people living in a 1.5-km radius of the natural gas producing well have been evacuated and placed in relief camps.
  - \* Locals have complained of symptoms such as burning of eyes, headache etc.

### Measures taken

- OIL had created a "water umbrella" by continuously spraying water over the area in order to prevent a fire.
  - \* Oil India Limited has also announced financial relief of Rs 30,000 to each to the affected families.
- The National Disaster Response Force (NDRF) has been deployed in the area since the time of the gas leak and top officials of Assam reviewed the situation.
- The Indian Air Force and the Army assisted in the firefighting operations. The Air Force had sent three fire engines, and the Army did provide its assistance. The area has been cordoned off by paramilitary forces.
- Experts from a Singapore firm were called in for assistance.
- TERI team was present at the site for studying air quality and noise level.
- Bioremediation of sludge was undertaken using a technology developed in-house by OIL's research and development wing.
  - \* Bioremediation is the cleaning of polluted sites through naturally occurring or introduced microorganisms for breaking down environmental pollutants.

### Similar events in the past:

In the past, two comparable blowouts have happened in Assam:

- At an OIL-owned oil well in Dikhom (Dibrugarh) in 2005.

- At an ONGC-owned oil well in Rudrasagar in the 1970s. This took three months to contain.

### **Dibru-Saikhowa National Park:**

- Dibru-Saikhowa is a National Park as well as a Biosphere Reserve situated on the south bank of the river Brahmaputra in Assam.
- It is an identified Important Bird Area (IBA) notified by the Bombay Natural History Society.



## **2. IFLOWS-Mumbai**

- It is an Integrated Flood Warning System
- It is a joint initiative between the Ministry of Earth Sciences (MoES) and Brihanmumbai Municipal Corporation (BMC)
- The warning system will be able to relay alerts of possible flood-prone areas anywhere between six to 72 hours in advance.
  - \* The system can provide all information regarding possible flood-prone areas, likely height the floodwater could attain, location-wise problem areas across all 24 wards and calculate the vulnerability and risk of elements exposed to flood.
- Mumbai is only the second city in the country after Chennai to get this system.
- Similar systems are being developed for Bengaluru and Kolkata.

### **How will it work?**

- The primary source for the system is the amount of rainfall, but with Mumbai being a coastal city, the system also factors in tidal waves and storm tides for its flood assessments.
- The system has provisions to capture the urban drainage within the city and predict the areas of

flooding. The system comprises seven modules- Data Assimilation, Flood, Inundation, Vulnerability, Risk, Dissemination Module and Decision Support System.

- The system incorporates weather models from the National Centre for Medium Range Weather Forecasting (NCMRWF), India Meteorological Department (IMD), field data from the rain gauge network of 165 stations set up by Indian Institute of Tropical Meteorology (IITM), BMC and IMD.

### **Why was this system needed in Mumbai?**

- Mumbai has been experiencing floods with increased periodicity.
- The flood in 2017 had brought the city to a standstill. In 2019, post-monsoon and unseasonal rainfall as late as October, two tropical cyclones in the Arabian Sea had caught authorities off guard and left a trail of destruction.
- In 2005 the city received a rainfall of 94 cm, a 100 year high in a span of 24 hours, which had paralyzed the city completely.
- Urban flooding is common in the city from June to September, resulting in the crippling of traffic, railways and airlines.
- As a preparedness for floods before they occur, the system will help in warning the citizens so that they can be prepared in advance for flooding conditions.

### **How will it be beneficial for Mumbai?**

- Based on the amount of rain recorded, time, location, topography and forecast, the system is designed to generate flood warnings for specific geographical areas of the city. All this information will then be routed to authorities.
- The early warning forecast would include alerts on rainfall information, tide levels, storm surge for low-lying areas anticipated to be affected, thereby minimizing the damage from cyclones and heavy rain events in Mumbai by evacuating people to safe areas.
- The system, initially only to be accessed by the civic body will enable them to issue alerts for citizens who can then avoid such zones.
- It will be very useful, especially if people need to be evacuated from low-lying areas as the system would be able to forecast 12 hours in advance that a particular spot may get flooded.

### **Context**

- Maharashtra's Chief Minister and Union Minister for Health and Family Welfare, Science and Technology launched an Integrated Flood Warning System called 'IFLOWS-Mumbai'

## **3. Locust control: 'govt. ignoring non-chemical measures'**

### **Context**

- Government's focus on chemical spray ignoring other natural methods for Locust Control.

**Ill-effects of chemical methods:**

- The ill-effects of aerial spraying of dangerous pesticides are well-established. The hazardous and long life chemicals would pollute the water and soil which could have a detrimental effect on the environment and human health.

**Non-chemical methods:**

The non-chemical methods would provide an effective approach to control locusts without serious side-effects. There are numerous strategies available under the non-chemical framework.

- The non-chemical measures could involve the use of biological methods to control locusts.
  - \* One simple strategy would be to protect birds that eat the predatory insects.
  - \* 1. China's deployment of the duck army is now becoming a diplomatic policy. China had even sent its duck army to Pakistan to deal with the locust menace.
  - \* Use of bio-pesticides provides for an effective solution.
  - \* 1. The oil formulations of *Metarhizium anisopliae* spores (mycopesticide) provide an effective control measure for locusts. *Metarhizium* biopesticide kills 70%-90% of treated locusts within 14-20 days, with no measurable impact on non-target organisms.
- Chintala Venkata Reddy, an organic farmer from Telangana who was awarded the Padma Shri, has suggested a method to control locust infestations.
  - \* It involves spraying mud (sub soil with high clay content) on to the standing crops.
  - \* 1. Given the fact that the locusts cannot digest the clay content, this measure will help control locusts without serious side-effects.
  - \* 2. After the locust threat is over, spraying the crop with plain water will remove the clay from the leaves.
  - \* Another way to control locusts within 24 hours is by spraying a concoction of linseed oil, edible soda/sodium bicarbonate and extracts of garlic, cumin and orange. This mixture also has no side effects on crops.

**Way forward:**

- There is a need to ensure that the locust control measures do not pollute air, water, environment and the food chain.
- There is a need for an integrated pest management strategy.
- If chemical methods cannot be neglected all together, then at least in the areas near the population and close to catchment and storage areas of waterbodies, the government must adopt the safer non-chemical measures instead of adopting chemical measures.

**Serotonin triggers desert locust swarms****Locust Environmental Booklet**

- It is an informative document released by Food and Agriculture Organization of the United Nations which gives an update on the situation and methods of handling locust swarms.

**Serotonin**

- Serotonin is an important chemical and neurotransmitter in the human body. It helps relay signals from one area of the brain to another.
  - \* Because of the widespread distribution of its cells, it is believed to influence a variety of psychological and other body functions.
- It is believed to help regulate mood and social behavior, appetite and digestion, sleep, memory, and sexual desire and function.
- It is sometimes called the happy chemical, because it contributes to wellbeing and happiness.
- There are many researchers who believe that an imbalance in serotonin levels may influence mood in a way that leads to depression. Possible problems include low brain cell production of serotonin

**Why locusts form swarms?**

- Insect biologists have long since known that the locust is by nature a recluse and a singleton, not mixing with others in the same group. Yet, when the harvest season arrives, these singletons team up with others as an army of swarms to attack plants for food.

**Locust Experiment**

- There was a study conducted by Cambridge University, U.K. and University of Sydney, Australia.
- According to this study, Serotonin is responsible for swarm formation.
- They did a lab experiment wherein they placed locusts in a container one by one, and as the numbers increased, the coming together triggered mechanical (touch) and neurochemical (serotonin) stimulations to make crowding ('gregarisation') occur within a few hours!
- Interestingly, when they started adding substances that inhibit the production of serotonin (for instance, molecules such as 5HT or AMTP), the crowding was significantly less.
- This mechanical stimulation affects a couple of nerves in the animal's body, their behaviour changes, leading to their coming together.

**Recommendation**

- Spray serotonin inhibitor molecules as the swarm begins to form

**4. Disasters displace lakhs: study****Context:**

- State of India's Environment 2020: in Figures report has been released.

**State of India's Environment 2020: in Figures report:**

- It is the annual statement on the state of affairs in environment and development sectors.
- The report is published by the Centre for Science and Environment (CSE).
- CSE also publishes the environment magazine Down to Earth.
- The report covers forests, wildlife, agriculture, rural development, water and sanitation and climate change related aspects.

**Details:**

- India had one in five of all internal displacements caused by disasters across the world in 2019, mostly caused by floods, cyclones and drought, according to the report.
- There were more than 50 lakh internal displacements in India last year (2019), the highest in the world.
  - \* This refers to the number of movements, not people, as individuals can be displaced several times.
- The compilation also offers a snapshot of data on forests, water, waste, air, land, wildlife and other natural resources.
- It notes that there were 747 more tigers in 2018 than in 2014. However, the net area meant for tiger conservation shrunk by 179 sq.km.
- Forest cover has shrunk in 38% of districts.
- 5 out of 21 river basins are now in a state of absolute water scarcity.

**What caused displacements?**

- Flooding caused by the southwest monsoon led to 26 lakh displacements, while Cyclone Fani alone led to 18 lakh displacements, followed by cyclones Vayu and Bulbul.
- Drought conditions in 19 States led to another 63,000 displacements.
- Apart from such forced migrations, many move for work. In 2011, over 1.7 crore new migrants had moved for employment purposes, mostly from rural to urban areas.

# GOVERNANCE

## 1. Central Employment Guarantee Council (CEGC)

- The Central government constituted the CEGC through a notification in 2006 to discharge the functions and perform duties assigned to it by or under the provisions of the National Rural Employment Guarantee Act, 2005.
- Headquartered in New Delhi, the Council consists of a Chairperson, representatives from the various ministries, representatives of state governments, non-official members representing Panchayati Raj institutions, organisations of workers and disadvantaged groups.
- The Council is headed by the Rural Development Minister.
- The CEGC's role is advisory and supervisory in nature.

### Functions of the CEGC:

- Establish a central evaluation and monitoring system.
- Advise the Central Government on all matters concerning the implementation of the MGNREGA.
- Review the monitoring and redressal mechanism from time to time and recommend improvements required.
- Promote the widest possible dissemination of information about the Schemes made under this Act.
- Monitoring the implementation of this Act.
- Preparation of annual reports to be laid before Parliament by the Central Government on the implementation of this Act.
- Any other duty or function as may be assigned to it by the Central Government.
- Undertake evaluation of the various Schemes made under this Act and for that purpose collect or cause to be collected statistics pertaining to the rural economy and the implementation of the Schemes.

### Context

- 21st Meeting of the Central Employment Guarantee Council (CEGC).

## 2. Garib Kalyan Rojgar Abhiyaan

- It is a rural public works scheme to empower and provide livelihood opportunities to the returnee migrant workers and rural citizens.
- Under this scheme, within 125 days, for 116 districts, nearly 25 schemes of the government will be brought together.
- Villages across 116 districts in the six states will join the programme through the Common Service Centres and Krishi Vigyan Kendras.

- The scheme entails creating infrastructure in the rural areas, apart from providing employment opportunities.
- Funds to the tune of Rs.50000 crore has been allocated for this scheme.
- The central and state governments have mapped the skill sets of migrant workers who have returned to the 116 districts.

### Some of the works include

- Gas pipelines, works under District Mineral Fund, waste management works, rural roads, Anganwadi centres, rural housing, railway works, RURBAN mission in rural areas, solar pump sets, laying of fibre optic cables, Jal Jeevan, etc.

### Coordinating ministries/departments

- Rural Development, Panchayati Raj, Road Transport & Highways, Mines, Drinking Water & Sanitation, Environment, Railways, Petroleum & Natural Gas, New & Renewable Energy, Border Roads, Agriculture and Telecom.

## 3. PM CARES not within the ambit of RTI Act: PMO

### Background

- The Prime Minister's Citizen Assistance and Relief in Emergency Situations (PM CARES) Fund was set to accept donations and provide relief during the COVID-19 pandemic, and other similar emergencies.
- A few days later an RTI application was filed, asking the PMO to provide the Fund's trust deed and all government orders, notifications and circulars relating to its creation and operation.

### PMO's information officer

- PM CARES Fund is not a Public Authority under the ambit of Section 2(h) of the RTI Act, 2005. However, relevant information in respect of PM CARES Fund may be seen on the Website [pmcares.gov.in](http://pmcares.gov.in)

The relevant section of the Act defines a "public authority" as "any authority or body or institution of self-government established or constituted — (a) by or under the Constitution; (b) by any other law made by Parliament; (c) by any other law made by State Legislature; (d) by notification issued or order made by the appropriate Government — and includes any (i) body owned, controlled or substantially financed; (ii) non-Government Organisation substantially financed, directly or indirectly by funds provided by the appropriate Government."

### Concerns

- Reports suggest that donations of over \$1 billion have been made, including contributions from foreign sources.



- No information exists on the official website of the Fund regarding the amount collected, names of donors, expenditure incurred, or details of beneficiaries.
- The trust deed of the fund chaired by the Prime Minister is not available for public scrutiny.
  - \* This is not just about lack of transparency and denying the application of the RTI Act to the fund, we should also be worried about how the fund is being operated.
  - \* One should know about the decision making process of the trust and safeguards available, so that the fund is not misused.
- CAG will not audit the fund. Rather, it will be audited by independent auditors appointed by the trust.
- PM is the ex-officio chairman of the Trust, while three cabinet ministers are ex-officio trustees, denying the status of 'public authority' is a big blow to transparency and not to mention our democratic values

#### 1. Democratic Right Violated

- Ironically, however, a corrosive narrative seems to have emerged that public scrutiny of government actions is undesirable during the crisis and citizens must unquestioningly trust the state.
- This undermines the basic democratic tenet that citizens' participation and oversight is necessary to ensure they are able to access their rights.
- Without information, peoples' ability to perform that role is eviscerated and corruption thrives.

#### 2. Access to information is crucial

- Relief and welfare programmes funded through public money are the sole lifeline of millions who suddenly lost income-earning opportunities during the lockdown.
- If the poor and marginalised affected by the public health emergency are to have any hope of obtaining the benefits of government schemes, they must have access to relevant information.
- During the COVID-19 crisis, proper implementation of the law has assumed greater significance than ever before.

#### Role of transparency watchdogs

In the current scenario the role of information commissions is crucial.

- An assessment of the functioning of the transparency watchdogs revealed that 21 out of 29 commissions in the country did not hold a single hearing during the first three stages of the lockdown.
- While the Central Information Commission and some State commissions used audio and video conferencing to hear and dispose cases, most commissions did not make provision for hearing even urgent matters.

- In the midst of a pandemic it is reasonable to expect delays in processing information requests, public authorities must not be allowed to interpret the crisis as a justification for not complying with the RTI Act.

#### Conclusion

- People must be able to obtain information about how and where their money is being spent in the efforts to combat the pandemic and whether funds are reaching the intended beneficiaries.
- It is behind the cloak of secrecy that the rights of individuals are most frequently abrogated, corruption thrives and public trust in institutions is eroded.

#### **4. MP questions Punjab govt's move on fixed term for IAS officers**

##### Context:

- Concerns expressed by a Rajya Sabha MP against the Punjab government's move on fixed terms for IAS officers.

##### Background:

Punjab government's proposal:

- The Punjab State government has proposed the setting up of a board to ensure a fixed term at a post to IAS officers.
- The State government proposes a fixed two-year tenure to an IAS officer at a posting. Any decision to cut short the term will be examined by the board.

##### Concerns:

- This move has been questioned based on the argument that a fixed tenure would make the IAS officers less answerable and accountable to legislators.
- The Rajya Sabha MP has argued that the move of assuring IAS officers of fixed tenure of postings and other immunities under the umbrella of the civil services board has tilted the scale decisively against the elected representatives.
- The Rajya Sabha MP further argues that this move renders the Ministers and MLAs helpless in raking up neglected issues of public importance and timely planning and execution of development works.

##### Counter-arguments:

- A fixed tenure for the bureaucracy could help insulate the bureaucracy from political pulls and pressures and help restrict arbitrary transfers and postings by the elected representatives.
- Arbitrary transfer is also a major bugbear of the bureaucracy, with politicians wielding it as a weapon against inconvenient officials.
- The Supreme Court has also previously ordered setting minimum tenure for bureaucrats.

**Conclusion:**

- A healthy working relationship between Ministers, MPs, MLAs and civil servants is critical for good governance and there is a need for the balancing of the rights of both the elected representatives and the bureaucracy.

# MISCELLANEOUS

## 1. Gustave Trouvé Awards

- Gustave Trouvé was a French electrical engineer and inventor
- Gussies Electric Boat Awards were instituted in memory of Gustave Trouvé, a pioneer in electric cars and boats. Trouvé was a prolific inventor with over 75 patents.
- Back in 1881, he developed a 5-m-long prototype electric boat.

### There are three award categories:

- One for electric boats up to 8m in length,
- Electric boats more than 8 m long and
- Electric ferry boats (passenger boats), the category in which Aditya is in the fray.

### Context

- 'Aditya', representing Asia in the Gustave Trouvé Awards event, is from Kerala.

### Details

- It is India's first solar-powered ferry
- Operated by the Kerala State Water Transport Department (KSWTD), the vessel was built by Navalt Solar and Electric Boats, Kochi.

### Significance

- The per km energy cost of Aditya is low, and the ferry normally operates 22 trips a day, covering a total of 66 km, carrying 75 passengers per trip.
- It needs just ₹180 per day in energy cost, compared to about ₹8,000 for a diesel-run ferry of similar size.

## 2. Statistics Day

### Context

- 29th June is observed as Statistics Day in India in honour of P. C. Mahalanobis.

### Details:

- The Indian Government started to observe this day in 2006 acknowledging the vast contribution of P. C. Mahalanobis in establishing the national statistical system.
- 29th June is the birth anniversary of Mahalanobis, a pioneer statistician.
- Mahalanobis contributed vastly to the design of large-scale sample surveys in India. He is also best remembered for the Mahalanobis distance, a statistical measure, and for being one of the members of the first Planning Commission of free India.

- In 2019, the Ministry of Statistics and Programme Implementation instituted a new award, namely, the Prof. P. C. Mahalanobis National Award in Official Statistics for recognizing outstanding achievement of official statisticians in Central Government, State Governments and Institutions.

- \* The Ministry recognises the outstanding contribution for high-quality research work in the field of applied and theoretical statistics benefitting the official statistical system through the Prof. C. R. Rao and Prof. P.V. Sukhatme awards, awarded in alternate years.

- Every year, Statistics Day is celebrated with a theme of current national importance, which runs for a year by way of several workshops and seminars, aimed at bringing about improvements in the selected area.

- The theme of Statistics Day, 2019 was "Sustainable Development Goals (SDGs)" and carrying this forward the theme of Statistics Day, 2020 is selected as SDG-3 (Ensure healthy lives and promote well-being for all at all ages) & SDG-5 (Achieve gender equality and empower all women and girls).

## 3. World Accreditation Day (WAD)

- It is celebrated on 9th June every year to highlight as well as promote the role of accreditation in trade & economy.
- The theme for WAD 2020 is "Accreditation: Improving Food Safety", as decided by the International Accreditation Forum (IAF) and the International Laboratory Accreditation Cooperation (ILAC).
- \* The term food safety describes all practices that are used to keep our food safe and relies on all players involved in the supply of food, from farmers and producers to retailers and caterers.

### Context:

- Quality Council of India (QCI) Celebrates the World Accreditation Day 2020.

## 4. Tablighi activity now a specific visa violation

### Context:

- The Union Home Ministry has included indulging in Tablighi activities as a specific visa violation that will attract a fine of \$500.

### Details:

- Home Ministry has added a new category—"restriction on engaging in Tabligh activities" in the "general policy guidelines relating to Indian visa".
- The guidelines provide details of 24 categories of visas and the various conditions under which they could be granted online or by missions abroad.

**Amended Guidelines:**

- As per the amended guidelines,
  - \* Foreign nationals granted any type of visa and Overseas Citizens of India (OCI) cardholders shall not be permitted to engage themselves in Tabligh work.
  - \* There will be no restriction in visiting religious places and attending normal religious activities like attending religious discourses.
  - \* However, preaching religious ideologies, making speeches in religious places, distribution of audio or visual display/pamphlets pertaining to religious ideologies, spreading conversion, etc. will not be allowed.
- The \$500 fine is also for other violations such as overstay of more than two years, visiting protected areas and cases involving both overstay and visa violations.

**Note:**

- The MHA had blacklisted 960 foreigners who participated in the Tablighi Jamaat event in March at Nizamuddin markaz (centre) in Delhi in March 2020.
- So far, a total of 2,600 Tablighi foreigners have been blacklisted from entering India for 10 years under "Category A" of the Visa Manual 2018.
- The Jamaat congregation, part of regular Tabligh activity, was attended by people from Nepal, Malaysia, Afghanistan, Myanmar, Algeria, Kyrgyzstan, Indonesia, Thailand and Sri Lanka.
- A foreigner who is blacklisted cannot get a visa from any of the missions to come to India.
- Home Ministry is the nodal agency that gives permission to any foreigner to participate in any international event.
- Any conference/event application is routed through an Indian mission abroad and without the Home Ministry's permission, the event cannot happen and participants are not issued visas.

**5. Gairsain**

- The Gairsain area in Chamoli district has been declared as the new summer capital of Uttarakhand.
  - \* Gairsain is a tehsil in Chamoli that is about 280 kms away from Dehradun, the state capital.
- The name Gairsain comes from two Garhwali words: Gair and Sain. Gair means at some depth, while Sain means rolling plains.
- The summer capital is at an altitude of 1,750 metres above sea level and lies at the eastern edge of Dudhatoli mountain range.
- It is also the source of the state's Ramganga River.

# PRACTICE QUESTIONS

**1. Which of the following statement/s is/are correct:**

1. Cyclonic storms are common in the pre-monsoon season.
2. The 2019, Cyclone Vayu, which formed in the Bay of Bengal, stalled the monsoons after it entered Kerala.

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**2. Which of the following statement/s is/are correct:**

1. The Gulf of Mannar is a large shallow bay forming part of the Laccadive Sea in the Indian Ocean.
2. The Gulf of Mannar Biosphere Reserve is the largest biosphere in India area-wise.
3. Dugong, the endangered herbivorous marine mammal, is found in the Gulf of Mannar.

Options:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

**3. Which of the following is not a centrally sponsored scheme:**

- A. Nutrient Based Subsidy
- B. Pradhan Mantri Awas Yojana
- C. Mid-day meal scheme
- D. Pradhan Mantri Gram Sadak Yojana

**4. Which of the following statement/s is/are correct:**

1. India is the largest milk producer in the world.
2. Close to 90% of the marketable surplus of milk production in India is handled by the organised sector.

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**5. Consider the following statements with respect to Bar Council of India:**

1. It is a constitutional body.
2. The Attorney General of India and the Solicitor General of India are its ex officio members.
3. It sets standards for legal education and grants recognition to Universities whose degree in law will serve as qualification for enrolment as an advocate.

Which of the given statement/s is/are incorrect?

- A. 3 only
- B. 1 only
- C. 2 and 3 only
- D. 1 and 2 only

**6. Consider the following statements with respect to Minimum Support Price (MSPs):**

1. Minimum Support Price (MSP) helps insure agricultural producers against any sharp fall in farm prices by announcing a guarantee price for their produce.
2. Government announces MSPs for 14 Kharif crops, 6 Rabi crops and 2 commercial crops.
3. MSP is recommended by the Cabinet Committee on Economic Affairs and approved by the Commission for Agricultural Costs and Prices (CACP).

Which of the given statement/s is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

**7. Consider the following statements:**

1. The Constitution provides that the Rajya Sabha shall consist of 245 members, of which 12 members shall be nominated by the President.
2. Elections to the Rajya Sabha are conducted in accordance with the system of proportional representation by means of the single transferable vote.
3. The Third Schedule to the Constitution provides for the allocation of seats to the States and Union Territories in Rajya Sabha.

Which of the given statement/s is/are correct?

- A. 1 only
- B. 2 and 3 only
- C. 2 only
- D. 1, 2 and 3



**8. "Earthquake Swarm" refers to:**

- A. A series of earthquakes occurring in a region within a relatively short period of time, without a major earthquake.
- B. The point where the energy is released during an earthquake.
- C. A mild earthquake preceding the violent shaking movement of an earthquake.
- D. Earthquakes of volcanic origin.

**9. Consider the following statements:**

- 1. Corona is the outermost shell of the Sun's atmosphere.
- 2. Chromosphere is a transparent layer between the corona and the photosphere.
- 3. Photosphere is the visible surface of the Sun.

Which of the given statement/s is/are correct?

- A. 2 and 3 only
- B. 1 only
- C. 1 and 3 only
- D. 1, 2 and 3

**10. Which among these tribes rear Changthangi and are the traditional producers of the Pashmina wool in the Ladakh region:**

- A. Changpa Tribe
- B. Bakarwal Tribe
- C. Dogra Tribe
- D. Balti Tribe

**11. Consider the following statements with respect to National Company Law Appellate Tribunal (NCLAT):**

- 1. It was constituted under the Companies Act, 2013.
- 2. It hears appeals against the orders of National Company Law Tribunal (NCLT).
- 3. It is the Appellate Tribunal to hear and dispose of appeals against any direction issued by the Competition Commission of India (CCI).

Which of the given statement/s is/are incorrect?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 3 only
- D. None of the above

**12. Gilgit-Baltistan borders:**

- 1. China
- 2. Afghanistan
- 3. Tajikistan

Choose the correct option:

- A. 1, 2 and 3
- B. 2 and 3 only
- C. 1 and 2 only
- D. 2 only

**13. Consider the following statements:**

- 1. Deep Web is the area of the Internet which is not accessible through search engines.
- 2. Dark Web is part of the Deep Web.
- 3. Dark Web is shielded by specialised software and is deliberately hidden.

Which of the given statement/s is/are correct?

- A. 1 only
- B. 1 and 2 only
- C. 1 and 3 only
- D. 1, 2 and 3

**14. Consider the following pairs:**

- 1. Border Security Force (BSF) – Bangladesh
- 2. Indo-Tibetan Border Police (ITBP) – China
- 3. Sashastra Seema Bal – Myanmar border
- 4. Assam Rifles – Nepal border

Which of the given pairs are correctly matched?

- A. 1 and 2 only
- B. 1, 2 and 3 only
- C. 1, 3 and 4 only
- D. 2, 3 and 4 only

**15. Consider the following statements with respect to Border Area Development Programme (BADP):**

- 1. Ministry of Defence has been implementing the Border Area Development Programme (BADP) as part of a comprehensive approach to Border Management.
- 2. The funds under BADP are provided to the States as a 100% non-lapsable Special Central Assistance.
- 3. The BADP schemes include construction of primary health centres, schools, supply of drinking water and other socio-economic aspects.

Which of the given statement/s is/are incorrect?

- A. 1 only
- B. 1 and 3 only
- C. 2 and 3 only
- D. None of the above

**16. Consider the following statements with respect to River Yamuna:**

1. It is declared a living person.
2. Tons, Hindon and Giri Rivers are its tributaries.
3. It is a major left bank tributary of River Ganga.

Which of the given statement/s is/are incorrect?

- A. 1 only
- B. 1 and 2 only
- C. 1 and 3 only
- D. None of the above

**17. Consider the following statements with respect to River Ambarnaya:**

1. It is a river in Siberia, within the Arctic Circle.
2. It flows in a northerly direction into Lake Pyasino.

Which of the given statement/s is/are incorrect?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**18. Consider the following statements with respect to PM CARES Fund:**

1. PM CARES Fund is barred from accepting donations and contributions from individuals and organizations based in foreign countries.
2. It is a Public Authority under the Right to Information (RTI) Act.
3. The fund gets annual budgetary support in addition to voluntary contributions from individuals or organizations.

Which of the given statement/s is/are incorrect?

- A. 1 only
- B. 1 and 3 only
- C. 1, 2 and 3
- D. None of the above

**19. Consider the following statements with respect to Chief of Defence Staff (CDS):**

1. CDS as a single-point military adviser to the government was suggested by the Kargil Review Committee in 1999.
2. CDS has the direct command of tri-service organizations.
3. Both Defence Acquisition Council and Defence Planning Committee are chaired by the CDS.

Which of the given statement/s is/are correct?

- A. 1 and 2 only
- B. 1 only
- C. 2 and 3 only
- D. None of the above

**20. Consider the following statements with respect to Silent Valley National Park:**

1. It is located in the Nilgiri Hills, of the Nilgiri Biosphere Reserve.
2. River Periyar flows through the national park.
3. It has a large population of lion-tailed macaques.

Which of the given statement/s is/are incorrect?

- A. 1 and 2 only
- B. 2 only
- C. 1 and 3 only
- D. 1, 2 and 3

**21. Which of the following statement/s is/are correct:**

1. The 10 non-permanent members of the United Nations Security Council are elected by the United Nations General Assembly for a term of four years.
2. The non-permanent members of the Council would be elected according to a regional grouping basis with the highest representation for the western European region.
3. A retiring member of the UNSC is eligible for immediate re-election.

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1, 2 and 3
- D. None of the above

**22. The Payments Infrastructure Development Fund has been set up by which of the following:**

- A. The Reserve Bank of India
- B. Indian Banks Association
- C. Ministry of Finance
- D. Ministry of Electronics and Information Technology

**23. Which of the following statement/s is/are correct:**

1. LiDAR technology is limited to the use of ultraviolet light for imaging objects.
2. LiDAR technology is employed in high-resolution imaging, obstacle detection and avoidance for autonomous vehicles, meteorological applications.

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**24. Petrapole is located in which of the following states:**

- A. Meghalaya
- B. Assam
- C. Tripura
- D. West Bengal

**25. Which of the following statement/s is/are incorrect:**

- 1. Insulin is a hormone secreted by the pancreas.
- 2. Type 1 diabetes is the most common type of diabetes and accounts for around 90% of all diabetes cases.

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**26. Which of the following statement/s is/are correct:**

- 1. TRAFFIC was founded as a strategic alliance of the World Wide Fund for Nature (WWF) and the International Union for the Conservation of Nature (IUCN).
- 2. TRAFFIC's headquarters is located in Cambridge, United Kingdom.
- 3. TRAFFIC promotes sustainable wildlife trade and combats wildlife crime and trafficking.

Options:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1,2 and 3

**27. Which of the following pairs is not a converging system of plates:**

- A. Eurasian Plate and the Indian Plate
- B. Australian Plate and the Pacific Plate
- C. Eurasian and North American Plate
- D. Nazca Plate and the South American Plate

**28. Which of the following statement/s is/are incorrect:**

- 1. River Vamsadhara is an east flowing river, with its basin spread over the states of Odisha, West Bengal and Andhra Pradesh states.

- 2. River Vamsadhara lies to the south of the Rushikulya river.

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**29. Which of the following statement/s is/are correct with respect to Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS):**

- 1. The Ministry of Rural Development (MRD) is monitoring the implementation of the scheme in association with state governments.
- 2. It provides a legal guarantee for 100 days of employment in every financial year to adult members of BPL households only.
- 3. There is a provision for right to get unemployment allowance in case employment is not provided within 30 days of application for the job.
- 4. Social Audit of MGNREGA works is mandatory.

Options:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1, 2, 3 and 4
- D. 1 and 4 only

**30. Which of the following statement/s is/are correct:**

- 1. Odisha has the largest tribal population among the states of India.
- 2. Odisha has the maximum number of PVTGs among the states of India.

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**31. If a person is travelling by road from Keonjhar to Imphal, what is the minimum number of states that he/she will have to pass through including the source and destination states:**

- A. 3
- B. 4
- C. 5
- D. 6

**32. Which of the following statement/s is/are incorrect:**

1. India is the largest producer of natural rubber in the world.
2. Kerala is the largest producer of natural rubber in India.

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**33. Which of the given pair/s is/are NOT correctly matched:**

1. Global Competitiveness Report: United Nations Conference on Trade and Development
2. Global Economic Prospects: World Economic Forum
3. World Economic Outlook: World Bank
4. Global Financial Stability Report: International Monetary Fund

Options:

- A. 1, 2 and 3 only
- B. 2 and 3 only
- C. 1, 3 and 4 only
- D. 3 and 4 only

**34. Consider the following statements with respect to National Human Rights Commission (NHRC):**

1. National Human Rights Commission is a constitutional body.
2. The recommendations made by the NHRC are not binding.
3. Violation of human rights by private parties cannot be considered under NHRC jurisdiction.

Which of the given statement/s is/are INCORRECT?

- A. 1 only
- B. 1 and 3 only
- C. 1, 2 and 3
- D. None of the above

**35. Consider the following statements:**

1. RBI carries out the Open Market Operations through commercial banks and does not directly deal with the public.
2. When the RBI wants to infuse liquidity into the monetary system, it will sell government securities in the open market.
3. Repurchase Agreement (REPO) is used by the central bank as a tool of open market operations.

Which of the given statement/s is/are correct?

- A. 1 only
- B. 1 and 2 only
- C. 1 and 3 only
- D. 2 and 3 only

**36. 'Oncomirs' recently in news refer to:**

- A. The process of controlling micro RNAs for bio-fortification.
- B. Micro RNAs associated with cancer.
- C. Magnetocaloric materials used for cancer treatment.
- D. An artificial intelligence-based computer diagnosis framework for rapid and accurate diagnosis of oral cancers.

**37. Consider the following statements:**

1. Currently 6 states in India have a Legislative Council.
2. The number of members in the Legislative Council should not be less than 40.
3. Total number of members in the legislative Council of a state must not exceed two-third of the members in the Legislative Assembly of that state.

Which of the given statement is/are INCORRECT?

- A. 2 only
- B. 3 only
- C. 1 and 2 only
- D. 2 and 3 only

**38. Which of the following pairs of Tiger Reserves and their locations is/are correctly matched:**

1. Tadoba-Andhari : Maharashtra
2. Nagarhole : Karnataka
3. Pilibhit : Uttar Pradesh
4. Simlipal : Mizoram

Options:

- A. 1, 2 and 4 only
- B. 1, 2 and 3 only
- C. 1, 2, 3 and 4
- D. 2 and 3 only

**39. Which of these are East flowing rivers that originate in the Western Ghats:**

1. Godavari
2. Krishna
3. Kaveri
4. Mahanadi

Options:

- A. 1, 2 and 3 only
- B. 1, 2 and 4 only
- C. 1, 2, 3 and 4
- D. 1 and 2 only

**40. Consider the following statements with respect to the Emergency Credit Line Guarantee Scheme (ECLGS):**

1. The scheme is applicable to MSMEs and MUDRA borrowers only.
2. Under the scheme 100% guarantee coverage is provided for additional funding of up to Rs. 3 lakh crore in the form of a Guaranteed Emergency Credit Line facility.
3. Tenor of the loan under the scheme is four years with a moratorium period of one year on the principal amount.

Which of the given statement/s is/are INCORRECT?

- A. 1 only
- B. 1 and 3 only
- C. 1, 2 and 3
- D. None of the above

**41. Consider the following statements:**

1. It was created on the recommendations of the Malhotra Committee report.
2. It is headquartered in Mumbai.
3. Insurance is a subject listed in the Union List in the Seventh Schedule.

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

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

**42. With reference to Dibru Saikhowa National Park, which of the following statement/s is/are correct:**

1. It is also designated as a Biosphere Reserve and is situated in the state of Assam.
2. It is the largest salix swamp forest in north-eastern India.

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**43. Which of the following statement/s is/are incorrect about Teesta River:**

1. It originates from the Pahunri glacier.

2. It flows through the states of Sikkim and Assam.

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**44. India is party to which of the following conventions:**

1. Biological Weapons Convention
2. Chemical Weapons Convention
3. Convention on Cluster Munitions

Options:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

**45. Which of the following statement/s is/are correct with respect to Gaur (Indian bison):**

1. It is currently limited only to India in the South Asian region.
2. It is listed as Vulnerable on the IUCN Red List and listed in Schedule-1 of the Indian Wildlife (Protection) Act, 1972.
3. It has been domesticated in north east India and is referred to as Mithun.

Options:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

**46. Which of the following statement/s is/are correct with respect to the International Criminal Court:**

1. It is based in Geneva, Switzerland.
2. It has jurisdiction over all UN General Assembly members.

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2



**47. Which of the following are parameters considered in the National Institutional Ranking Framework (NIRF):**

1. Perception of the stakeholders
2. Outreach and inclusivity
3. Graduation outcomes
4. Research outcome
5. Teaching and learning resources

Options:

- A. 3, 4 and 5 only
- B. 2, 3, 4 and 5 only
- C. 1, 2, 3, 4 and 5
- D. 1, 3 and 4 only

**48. Which of the following statement correctly describes white label ATMs:**

- A. ATMs set up, owned and operated by non-bank entities.
- B. ATMs which are owned and maintained by service providers whereas a sponsor bank whose brand is used on ATM takes care of cash management and network connectivity.
- C. ATMs which use security features like fingerprint scanner and eye scanner of the customer to access the bank details.
- D. ATMs limited to operation only in rural areas.

**49. Which of the following statement/s is/are correct:**

1. States are guaranteed a 14 per cent tax revenue growth in the first five years after GST implementation.
2. As per the GST act, the Centre must pay the States full compensation for any shortfall in GST revenue collections until 2022.
3. The compensation cess meant to finance the compensation paid to the states is levied on all goods.

Options:

- A. 1 and 2
- B. 2 and 3
- C. 1 and 3
- D. 1,2 and 3

**50. In which of the following fields does Doppler Effect find application:**

1. Weather forecasting
2. Flow measurement
3. Radar technology
4. Medical field
5. Aerospace navigation
6. Military applications

Options:

- A. 1 and 3 only
- B. 1, 3 and 5 only
- C. 1, 2, 3, 4, 5 and 6
- D. 1, 2, 3 and 5 only

**51. Which of the following correctly describes the term Phishing:**

- A. It involves making a machine or network resource unavailable to its intended users by temporarily or indefinitely disrupting services of a host connected to the Internet.
- B. It involves disguising oneself as a trustworthy entity in an electronic communication to obtain sensitive information.
- C. It involves gaining access to personal electronic devices through mimicking of biometric details of the original user.
- D. It involves locking the user out of their files or their device and demanding an anonymous online payment to restore access.

**52. Which of the following pairs is wrongly matched:**

- A. Lonar lake: Maharashtra
- B. Loktak lake: Manipur
- C. Wular lake: Jammu and Kashmir
- D. Bhojtal: Haryana

**53. Which of the following statement/s is/are correct about Sant Dnyaneshwar:**

1. He was a 13th-century saint philosopher from the Matura region.
2. He authored Dnyaneshwari which is a commentary on the Bhagavad Gita.
3. He is regarded as one of the founders of the Varkari Bhakthi movement.

Options:

- A. 1 and 2
- B. 2 and 3
- C. 1 and 3
- D. 1,2 and 3

**54. Which of the following statement/s is/are correct with respect to the Attorney General?**

1. He/she is appointed by the President of India on the advice of Union Cabinet and holds office during the pleasure of the President.
2. He/she must be a person qualified to be appointed as a Judge of the Supreme Court.

3. The Attorney General has the right of audience in all Courts in India as well as the right to participate in the proceedings of the Parliament, though not to vote

Options:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

**55. The RECOVERY trial is associated with which of the following:**

- A. It is the experiment conducted by ISRO to test the efficacy of its pad abort system.
- B. It is the experiment involving the study of novel bacteria in absorbing oil spill in the Russian Arctic region.
- C. It is a large randomised controlled trial to test the efficacy of potential drugs for treating COVID-19 patients.
- D. It is a mock drill conducted by the NDRF to check its preparedness to the landfall of severe cyclones

**56. Which of the following correctly describes the goal of the Jal Jeevan Mission:**

- A. It envisages providing piped drinking water to all rural households by 2024.
- B. The scheme aims to provide piped water to every household within the next 5 years
- C. It is envisaged as a demand-driven and community centred program to provide sustainable access to drinking water to people in rural areas.
- D. It envisages providing piped drinking water to all BPL households by 2022.

**57. Which of the following pairs is/are correctly matched:**

- 1. Indian Navy's Information Fusion Centre for Indian Ocean Region (IFC-IOR): Gurugram
- 2. Regional Maritime Information Fusion Centre (RMIFC): Madagascar
- 3. European maritime surveillance initiative in the Strait of Hormuz: Abu Dhabi

Options:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 only
- D. 1, 2 and 3

**58. Which of the following statement/s is/are correct with respect to Indian Ocean Commission (IOC):**

- 1. It is an intergovernmental organisation headquartered in Mauritius.

2. India is an observer member of IOC.

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**59. Which of the following cities lies on a longitude closest to Bangalore:**

- A. Hyderabad
- B. Nagpur
- C. Bhopal
- D. Thiruvananthapuram

**60. Which of the following statement/s is/are correct:**

- 1. The Non-Cooperation Movement arose in the backdrop of the Jallianwala Bagh massacre and the controversy surrounding the Rowlatt Act.
- 2. Post the Chauri Chaura incident in February 1922, Gandhi called off the Non-Cooperation Movement.

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**61. Consider the following statements with respect to "Talamaddale":**

- 1. It is a variant of the traditional Indian theatre form, Yakshagana.
- 2. Major highlights of this art form are dance, costumes and stage conventions.
- 3. The chief narrator in the Talamaddale performance is known as Arthadhari.

Which of the given statement/s is/are incorrect?

- A. 2 only
- B. 2 and 3 only
- C. 1 and 2 only
- D. None of the above

**62. Under the Vienna Convention on Diplomatic Relations, 1961:**

- 1. A diplomat enjoys immunity from the criminal jurisdiction of the receiving State.
- 2. The diplomat is exempt from the jurisdiction of the sending State.

3. The private residence of a diplomatic agent shall enjoy the same inviolability and protection as the premises of the mission.

Which of the given statement/s is/are correct?

- A. 1 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

**63. Consider the following statements:**

1. Russia and the USA together possess over 90 per cent of the global nuclear weapons.
2. Both China and Pakistan have larger nuclear arsenals than India.
3. The New Strategic Arms Reduction Treaty, to which India, Russia, USA and China are party, would lapse in 2021.

Which of the given statement/s is/are correct?

- A. 1 only
- B. 2 only
- C. 1, 2 and 3
- D. 1 and 2 only

**64. Consider the following statements with respect to International Atomic Energy Agency (IAEA):**

1. IAEA is one of the specialised agencies of the United Nations.
2. India is a founding member of the IAEA.
3. Programme of Action for Cancer Therapy (PACT) is a programme created by IAEA.

Which of the given statement/s is/are incorrect?

- A. 1 only
- B. 3 only
- C. 1 and 2 only
- D. None of the above

**65. Consider the following statements with respect to Lonar Lake:**

1. It is a volcanic crater.
2. It is a National Geo-heritage Monument.
3. Lonar Lake and surrounding regions are declared as a wetland of ecological importance under the Ramsar Convention.

Which of the given statement/s is/are incorrect?

- A. 3 only
- B. 1 and 3 only
- C. 1 and 2 only
- D. 1, 2 and 3

**66. Consider the following statements with respect to Gangetic River Dolphins:**

1. They are blind and catch their prey using ultrasonic sound waves.
2. They are categorised as Endangered on the IUCN Red List.
3. It is the National Aquatic Animal of India.
4. It is the official animal of Guwahati.

Which of the given statement/s is/are correct?

- A. 1, 3 and 4 only
- B. 1 and 3 only
- C. 1, 2 and 4 only
- D. 1, 2, 3 and 4

**67. Consider the following statements:**

1. Once in every two years, the UN General Assembly elects five non-permanent members of the Security Council.
2. The non-permanent members of the Security Council are elected by a two-thirds majority.
3. A retiring member of the UNSC is not eligible for immediate re-election.

Which of the given statement/s is/are correct?

- A. 1 only
- B. 1 and 3 only
- C. 2 and 3 only
- D. 1, 2 and 3

**68. Deepor Beel is located in:**

- A. Arunachal Pradesh
- B. Gujarat
- C. Assam
- D. Sikkim

**69. Consider the following statements about Dibru-Saikhowa National Park:**

1. It is also a Biosphere Reserve situated on the south bank of the river Brahmaputra.
2. The park is bounded by the Brahmaputra and Lohit Rivers in the north.
3. It is an Important Bird Area (IBA) notified by the Bombay Natural History Society.

Which of the given statement/s is/are incorrect?

- A. 2 only
- B. 1 and 3 only
- C. 3 only
- D. None of the above

**70. Consider the following statements with respect to Qualified Institutional Placements (QIPs):**

1. The QIP allows an Indian-listed company to raise capital from foreign markets.
2. QIPs are a way to issue shares to the public without the submission of pre-issue filings to SEBI.

Which of the given statement/s is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**71. Consider the following statements with respect to Asian Infrastructure Investment Bank (AIIB):**

1. India is the second-largest shareholder in the bank, followed by Russia standing third.
2. All the G-20 nations are members of the AIIB.
3. It is headquartered in Manila, Philippines.

Which of the given statement/s is/are correct?

- A. 1 only
- B. 2 and 3 only
- C. 1, 2 and 3
- D. 1 and 3 only

**72. Consider the following statements:**

1. A housing finance company is considered a non-banking financial company (NBFC) under the RBI's regulations.
2. A company is treated as an NBFC if its financial assets are more than 50% of its total assets and income from financial assets is more than 50% of the gross income.

Which of the given statement/s is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**73. Consider the following statements:**

1. Largest reserves of coal in the world is found in India.
2. India is the second largest producer of coal.
3. India is the second largest importer of coal.

Which of the given statement/s is/are incorrect?

- A. 1 only
- B. 2 and 3 only
- C. 1, 2 and 3
- D. None of the above

**74. "Rule of Law Index" is released by:**

- A. International Court of Justice
- B. World Justice Project
- C. International Criminal Court
- D. European Court of Justice

**75. Consider the following statements:**

1. References of Megalithic culture can be found in ancient Tamil Sangam literature.
2. Majority of megalithic sites are found in Peninsular India.
3. A Menhir is a burial monument, or tomb, of the megalithic age.

Which of the given statement/s is/are correct?

- A. 1 and 3 only
- B. 2 and 3 only
- C. 1 only
- D. 1, 2 and 3

**76. Consider the following statements with respect to International North South Transport Corridor (INSTC):**

1. It is a multi-modal transportation network established in 2015.
2. The corridor connects Indian Ocean and Persian Gulf to the Caspian Sea via Iran.
3. Russia, India and Iran are the founding member states of INSTC.
4. Syria, Oman and Azerbaijan are members of INSTC.

Which of the given statement/s is/are correct?

- A. 2 and 3 only
- B. 1, 2 and 3 only
- C. 1, 2, 3 and 4
- D. 2, 3 and 4 only

**77. Which of the following statement/s is/are correct**

1. The Asia-Pacific Trade Agreement (APTA), previously known as the Bangkok Agreement was signed in 2015.
2. India and China are the founding members of the Asia-Pacific Trade Agreement (APTA).

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**78. The Keeladi Excavation site is situated in which of the following states:**

- A. Karnataka
- B. Tamil Nadu
- C. Kerala
- D. Telangana

**79. Which of the following statement/s is/are correct with respect to the World Food Programme (WFP):**

- 1. It is a member of the United Nations Development Group.
- 2. It is headquartered in Rome.

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**80. Which of the following statement/s is/are incorrect with respect to the International Atomic Energy Agency (IAEA):**

- 1. It was established by the UN General Assembly in 1957.
- 2. It reports to both the United Nations General Assembly and Security Council.

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**81. Which of the following pairs are correctly matched:**

- 1. Titan: Saturn
- 2. Enceladus: Saturn
- 3. Europa: Jupiter
- 4. Tethys: Jupiter
- 5. Deimos: Mars
- 6. Ganymede: Jupiter

Options:

- A. 2 and 3 only
- B. 4, 5 and 6 only
- C. 1, 2, 3, 5 and 6 only
- D. 1, 2, 3, 4, 5 and 6

**82. Which of the following statement/s is/are correct:**

- 1. The Bosphorus strait connects the Black sea with the Sea of Marmara.
- 2. The Dardanelles connects the Aegean Sea and Mediterranean Sea.

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**83. Which of the following statement/s is/are correct:**

- 1. The ungulate Chiru is native to the Tibetan plateau.
- 2. They are hunted for their soft, light and warm underfur, known as Shahtoosh.
- 3. Chiru is classified as 'near threatened' under the IUCN red list.

Options:

- A. 1, 2 and 3
- B. 1 and 3 only
- C. 2 and 3 only
- D. 1 and 2 only

**84. Which of the following correctly describes beta biodiversity:**

- A. It refers to the diversity within a particular area or ecosystem.
- B. It measures the change in diversity of species from one environment to another.
- C. It is a measure of the overall diversity for the different ecosystems within a region.
- D. It refers to the diversity or variability within species.

**85. Which of the following statement/s is/are correct:**

- 1. Jal Jeevan Mission envisages providing drinking water tap connections to every rural household by 2024.
- 2. Jal Jeevan Mission envisages supply of 55 litres of water per person per day to every rural household.
- 3. Jal Jeevan Mission focuses on both demand and supply-side management of water at the local level.

Options:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3



**86. Which of the following statement/s is/are correct with respect to Gee's golden langur:**

1. It is endemic to Assam and Bhutan.
2. It is classified as endangered under the IUCN classification.
3. Chakrashila is India's first wildlife sanctuary with golden langur as the primary species.

Options:

- A. 1, 2 and 3
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1 and 2 only

**87. Which of the following pair/s is/are correctly matched:**

1. CH-47 Chinook: Heavy lift helicopters
2. AH-64 Apache: Attack helicopter
3. MH-60 Romeo: Anti submarine warfare helicopters

Options:

- A. 1 only
- B. 2 and 3 only
- C. 1, 2 and 3
- D. 2 only

**88. The SAMADHAN doctrine is directed at**

- A. Indian Ocean domain awareness
- B. Left wing extremism
- C. North East insurgency
- D. Developmental work in Jammu and Kashmir

**89. Consider the following statements with Respect to UN Arms Trade Treaty:**

1. The treaty regulates global arms trade as well as the domestic sale or use of weapons in the member states.
2. It establishes common international standards for the regulation of the international trade in ammunition, weapons parts, and arms components.
3. India has not signed the treaty.

Which of the given statement/s is/are incorrect?

- A. 1 only
- B. 1 and 3 only
- C. 1 and 2 only
- D. 2 and 3 only

**90. Senkaku Islands - a disputed territory, is located in which sea:**

- A. Sea of Japan
- B. East China Sea
- C. Yellow Sea
- D. South China Sea

**91. Consider the following statements with respect to the Malabar Rebellion of 1921**

1. It was the riots by Moplahs, directed against the British and also the Hindu landlords.
2. The British viceroy in India during the rebellion was Lord Reading.

Which of the given statement/s is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**92. Consider the following statements with respect to CITES:**

1. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival.
2. It classifies plants and animals according to five categories based on how threatened they are.
3. It is administered by the United Nations Environment Programme (UNEP).
4. CITES is legally binding on state parties to the convention.

Which of the given statement/s is/are correct?

- A. 1, 2 and 3 only
- B. 1, 3 and 4 only
- C. 1, 2, 3 and 4
- D. 1 and 2 only

**93. "New START Treaty" refers to:**

- A. A nuclear arms reduction treaty between the United States and the Russian Federation.
- B. A multilateral trade agreement between BRICS nations.
- C. A multilateral treaty aimed at regulating the global arms trade.
- D. Bilateral energy security cooperation between the Russian Federation and the U.S.A.

**94. Consider the following statements with respect to Government e Marketplace (GeM):**

1. It is a state-of-the-art national public procurement platform of the Ministry of Agriculture.
2. It facilitates online procurement of common use goods and services required by various Government Departments and Public Sector Undertakings.
3. It provides e-bidding, reverse e-auction and demand aggregation tools.

Which of the given statement/s is/are correct?

- A. 1 and 3 only
- B. 1 and 2 only
- C. 2 and 3 only
- D. 1, 2 and 3

**95. Kunjahammad Haji is associated with which of the following uprisings:**

- A. Paika Rebellion
- B. Moplah Rebellion
- C. Faraizi Revolt
- D. Poligar Revolt

**96. Consider the following statements with respect to India's renewable energy targets:**

1. India has set a target of installing 175 GW of renewable energy capacity by the year 2022.
2. It has set a target of 20 GW of solar capacity by 2022.

Which of the given statement/s is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**97. Consider the following statements with respect to Koundinya wildlife sanctuary:**

1. Koundinya wildlife sanctuary is also an Elephant Reserve.
2. It is the only sanctuary in Andhra Pradesh with a population of Asian Elephants.

Which of the given statement/s is/are incorrect?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**98. Consider the following statements with respect to Bal Gangadhar Tilak:**

1. He is the author of Geeta rahasya.
2. He founded two newspapers – Kesari in English and Mahratta in Marathi.
3. He was one of the founders of the All India Home Rule League.

Which of the given statement/s is/are correct?

- A. 2 and 3 only
- B. 1 and 2 only
- C. 1 and 3 only
- D. 1, 2 and 3

**99. Consider the following statements with respect to The Foreign Exchange Management Act, 1999 (FEMA):**

1. It is a regulatory mechanism that enables RBI to pass regulations and the Central Government to pass rules relating to foreign exchange in tune with the Foreign Trade policy of India.
2. Violation of FEMA is a criminal offence.
3. Enforcement Directorate is responsible for enforcement of the provisions of Foreign Exchange Management Act.

Which of the given statement/s is/are correct?

- A. 1 and 2 only
- B. 1 and 3 only
- C. 1, 2 and 3
- D. 2 and 3 only

**100. Which of the following are literary works of Aurobindo Ghosh:**

1. Hour of God
2. Savitri
3. The Future Evolution of Man
4. Bhagavad Gita and Its Message

Choose the correct option

- A. 1 and 2 only
- B. 1, 2 and 4 only
- C. 2 only
- D. 1, 2, 3 and 4

**101. Consider the following statements:**

1. Ozone is produced naturally in the stratosphere.
2. Ground level Ozone damages crops, trees and other vegetation.
3. Ground Level Ozone is one of the pollutants tracked by the Air Quality Index.

Which of the given statement/s is/are correct?

- A. 1 and 3 only

- B. 3 only
- C. 1, 2 and 3
- D. 1 only

**102. Consider the following statements with respect to IN-SPACe:**

1. It is the only commercial arm of the Department of Space.
2. It is tasked with regulating and promoting building of routine satellites, rockets and commercial launch services through Indian industry and start-ups.

Which of the given statement/s is/are incorrect?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**103. Consider the following statements:**

1. International Criminal Court (ICC) is an independent entity governed by the Rome Statute.
2. ICC is the world's first permanent international criminal court.
3. ICC settles disputes between states and gives advisory opinions on international legal issues referred to it by the UN.
4. India is a party to the Rome Statute.

Which of the given statement/s is/are correct?

- A. 1, 3 and 4 only
- B. 1, 2 and 4 only
- C. 1, 2, 3 and 4
- D. 1 and 2 only

**104. Consider the following statements with respect to Financial Action Task Force (FATF):**

1. FATF is a policy-making body with no investigative authority.
2. It was established in 1989 during the G7 Summit in Paris.
3. It works towards combating money laundering and terrorist financing.
4. It is headquartered in Paris.

Which of the given statement/s is/are incorrect?

- A. 1 and 4 only
- B. 1 and 2 only
- C. 3 only
- D. None of the above

**105. Which of the following correctly explains DiEM25:**

- A. It is a pan-European political movement aiming for creation of political organisations at a pan-European level.
- B. It is an intergovernmental disaster management initiative involving 25 developing countries.
- C. It is a global denuclearization movement aiming for a universal denuclearization agreement by 2025.
- D. It is an initiative of the WHO to help the developing and under developed countries in the management of the COVID-19 pandemic.

**106. Which of the following are the right bank tributaries of the Brahmaputra River:**

1. Kameng
2. Lohit
3. Manas
4. Teesta
5. Dhansiri
6. Subansiri

Options:

- A. 1, 2, 4 and 6 only
- B. 1, 2, 3 and 5 only
- C. 3, 4 and 5 only
- D. 1, 3, 4 and 6 only

**107. Which of the following statement/s is/are correct:**

1. The United Nations was founded in 1945.
2. The United Nations is headquartered in New York City.
3. India is a founding member of the United Nations.

Options:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

**108. Which of the following statement/s is/are correct:**

1. The Finance Commission is a constitutionally mandated body under Article 280 of the Indian Constitution.
2. The 15th Finance commission recommendations are for the period 2020-2025.

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**109. Which of the following statements are correct with respect to the United Nations Convention on the Law of the Sea (UNCLOS):**

1. Exclusive economic zone (EEZ) extends to 100 nautical miles from the baseline set as per the UNCLOS.
2. It establishes general obligations for protecting freedom of scientific research on the high seas.
3. It has established a legal regime for controlling mineral resource exploitation in deep seabed areas beyond national jurisdiction.

Options:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

**110. Which of the following statements are correct with respect to Financial Action Task Force (FATF):**

1. FATF was established in 1989.
2. India is a founding member of the FATF.
3. The FATF focuses on Combating the Financing of Terrorism (CFT) and Anti-Money Laundering.

Options:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

**111. Which of the following statement/s is/are correct:**

1. Indian Ocean Dipole (IOD) indicates the irregular oscillation of sea surface temperatures between the western Indian Ocean and the eastern Indian Ocean.
2. A positive Indian Ocean Dipole (IOD) indicates the western Indian Ocean becoming warmer than the eastern Indian Ocean.
3. A positive Indian Ocean Dipole (IOD) is associated with higher monsoon rainfall in India.

Options:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

**112. Which of the following pairs is/are correctly matched:**

1. Human beta cells: Insulin
2. Human alpha cells: Glucagon

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**113. Which of the following statement/s is/are correct:**

1. Narcondam hornbill is classified as endangered under the IUCN Red List.
2. Narcondam hornbill is endemic to the Narcondam Island in the Lakshwadeep Islands.

Options:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**114. Which of the following correctly describes the term 'gynandromorphism':**

- A. Condition in which a species individual has alternating male and female characteristics over its lifetime.
- B. Condition in which a species individual has both male and female tissues at the same time.
- C. Condition in which a species exhibits multi-habitat adaptation capabilities by morphological changes.
- D. Condition in which a species exhibits adaptability to drastic changes in climatic conditions.

**115. The Kole wetland is situated in which of the following states:**

- A. Tamil Nadu
- B. Andhra Pradesh
- C. Kerala
- D. Karnataka

**116. Which of the following is the correct description of the S-400 Triumph:**

- A. Anti-submarine warfare helicopter
- B. Naval surveillance system
- C. Third generation Unmanned Combat Aerial Vehicle
- D. Anti-aircraft weapon system

**117. Consider the following statements with respect to Strengthening Teaching-Learning and Results for States Program (STARS):**

1. It aims to improve the quality and governance of school education in all the States and Union Territories of India.
2. The project will be implemented through the Samagra Shiksha Abhiyan.

Which of the given statement/s is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**118. Kholongchhu hydropower project is a joint venture between India and which one of these countries:**

- A. Bhutan
- B. Nepal
- C. China
- D. Bangladesh

**119. Consider the following statements with respect to Rafale jets:**

1. Rafale is a Medium Multi-Role Combat Aircraft.
2. It can be used to perform ground and sea attacks.
3. It is a twin-engine jet capable of nuclear strike deterrence.

Which of the given statement/s is/are correct?

- A. 1 only
- B. 1 and 2 only
- C. 2 and 3 only
- D. 1, 2 and 3

**120. Consider the following statements with respect to PM SVANidhi scheme:**

1. It is a Special Micro-Credit Facility Scheme providing affordable loans to women Self Help Groups in urban areas.
2. A working capital loan of up to Rs. 10,000 can be availed, which is repayable in monthly instalments in the tenure of one year.
3. It is a Central Sector Scheme.

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

- A. 1 only
- B. 2 and 3 only
- C. 3 only
- D. 1 and 3 only



# ANSWER KEYS

1	A
2	C
3	A
4	A
5	B
6	A
7	C
8	A
9	D
10	A
11	D
12	C
13	D
14	A
15	A
16	C
17	D
18	C
19	A
20	B

21	D
22	A
23	B
24	D
25	B
26	D
27	C
28	A
29	D
30	B
31	B
32	A
33	A
34	A
35	C
36	B
37	B
38	B
39	A
40	D

41	C
42	C
43	B
44	A
45	B
46	D
47	C
48	A
49	A
50	C
51	B
52	D
53	B
54	D
55	C
56	A
57	D
58	C
59	C
60	C

61	B
62	C
63	D
64	A
65	B
66	D
67	C
68	C
69	D
70	B
71	A
72	C
73	A
74	B
75	D
76	D
77	D
78	B
79	C
80	A

81	C
82	C
83	A
84	B
85	D
86	A
87	C
88	B
89	A
90	B
91	C
92	B
93	A
94	C
95	B
96	A
97	D
98	C
99	B
100	D

101	C
102	A
103	D
104	D
105	A
106	D
107	D
108	C
109	B
110	C
111	D
112	C
113	A
114	B
115	C
116	D
117	B
118	A
119	D
120	A

## MAINS PRACTICE QUESTIONS

1. Discuss the potential benefits of a universal basic income (UBI) programme in India and the challenges in implementing such a scheme in India. (15 marks, 250 words)
2. In the light of the locust infestations in India, discuss both short and long term measures to address this challenge. (10 marks, 150 words)
3. Discuss the features of India's diplomacy in the African continent and compare and contrast it with China's diplomatic approach to Africa. (15 marks, 250 words)
4. Analyze the vulnerability of India to the hazard of earthquakes and suggest short, medium and long-term actions to mitigate the risks involved. (10 marks, 150 words)
5. Discuss how the emerging new cold war like scenario has proved to be detrimental to multilateralism. Suggest what should be India's role in this evolving situation. (15 marks, 250 words)
6. Though the pandemic and the lockdown have resulted in a measurable drop in overall crime level, specific crimes have gone up or have assumed new forms. Comment. (10 marks, 150 words)
7. During these extraordinary times of the COVID-19 pandemic, parliament's activities are suspended. What innovative measures can be taken to ensure the continuity of parliamentary democracy in India? (10 Marks, 150 Words)
8. Evaluate the impact of electricity subsidies given to the farmers. Suggest alternative approaches for farmer welfare and sustainable agricultural development. (15 Marks, 250 Words)
9. Developmental projects have increased pressure on resources in and around wildlife areas bringing animals within human range, which has increased man-animal conflicts. Discuss the key policy reforms that need to be introduced to help in conflict mitigation. (10 Marks, 150 Words)
10. War of words and escalating tensions between USA and China bring to light a new era of cold war. How will it impact their relationship bilaterally and what are the international ramifications? (15 Marks, 250 Words)
11. What are the major concerns with the funding of Pharmaceutical Research and Development? Discuss how, a reward mechanism oriented towards health gains would lead to a sustainable research-and-marketing system. (15 Marks, 250 Words).
12. The agricultural sector reforms sought through the Atmanirbhar Bharath economic package though well intended, have some associated concerns. Comment. (15 Marks, 250 Words).
13. Elaborate on the recent changes in the compilation of national accounts in India. Analyze the arguments both in favour of and against the changes made. (15 marks, 250 words)
14. In the light of the recent recording of seven small earthquakes in the NCR, there are fears of a high-magnitude earthquake in the region. Evaluate the threat perception for the region. (15 marks, 250 words)
15. Soaring tensions in the Persian Gulf have placed immense strain on the regional security structure. Will USA's gradual withdrawal further destabilize and internationalize the region? Critically examine. (15 Marks, 250 Words)
16. Engaging private hospitals to treat COVID-19 patients is currently beset with ambiguity. What policy changes are required to bridge the current healthcare gap in the fight against COVID-19? (10 Marks, 150 Words)
17. In light of the severe economic downturn caused by the novel coronavirus pandemic, there have been calls for higher 'discretionary fiscal stimulus' backed by monetizing of the deficit. Analyze the arguments both in favour of and against such a move. (15 marks, 250 words)
18. Strategies in tackling the current COVID-19 crisis must include local governments being appropriately equipped and fiscally empowered. Comment. (15 marks, 250 words)
19. In light of the increasing 'e-diplomacy' summits, discuss the significance and concerns associated with e-diplomacy. (10 marks, 150 words)

20. Discuss the concerns associated with climate change. Enumerate the geo-engineering solutions being proposed to tackle the climate change challenge and evaluate their effectiveness. (15 marks, 250 words)
21. Recent efforts by China and Pakistan to challenge India's presence in the Kashmir-Ladakh region are indicative of their overlapping interests, but they have differing objectives and have used different approaches. Comment. (10 marks, 150 words)
22. Government spending on Healthcare has stagnated, which has led to a boom in the private healthcare sector. What possible measures can help improve availability, accessibility and effectiveness of healthcare services? (15 Marks, 250 Words)
23. Failure to address global issues and the absence of emerging global powers in the grouping has rendered the G7 irrelevant. Discuss the need for an energized multilateral body to promote economic reforms and collective action. (15 Marks, 250 Words)
24. Analyze how habitat loss and fragmentation are leading to increased instances of man-animal conflicts. Suggest suitable measures to reduce the risks of man-animal conflicts. (15 marks, 250 words)
25. India has shared civilizational, cultural and friendly relations with Nepal. However, the recent irritants between the two countries threaten this bilateral relationship. Analyze the factors for this deterioration in ties and the risks associated with this for India. (10 marks, 150 words)
26. In the light of the educational institutions across the country switching to online classes in the face of the COVID-19 pandemic, evaluate the advantages and concerns associated with such a move. (15 marks, 250 words)
27. The recent border skirmishes along the Line of Actual Control seem to be indicative of the Chinese approach to use the border problem to pressurize India on other issues. In such a scenario analyze what should be India's response to protect its sovereign interests. (10 marks, 150 words)
28. The COVID-19 pandemic has seen renewed efforts at rapid vaccine development. In this light discuss the major challenges in the development of the vaccine and its usage. (10 marks, 150 words)
29. Analyze the threat of forest fires in the Indian context. Discuss the major provisions of the National action plan on forest fire. (10 marks, 150 words)
30. Analyze how Maritime Domain Awareness (MDA) of the Indian Ocean region is of critical importance to India. Discuss the steps being taken by India in this regard. (15 marks, 250 words)
31. Discuss the constitutional provisions dealing with the aspect of equality in India. Evaluate the effectiveness of these provisions in addressing the challenge of inequality in India. (10 marks, 150 words)
32. The COVID-19 pandemic poses serious challenges to the India – West Asia dynamic, but there is scope for India and West Asia to help each other out of this crisis. Comment. (10 marks, 150 words)
33. The recent India – Chinese border stand-off is an indication of not just local differences along the border or strained bilateral relations, but is also indicative of a larger geopolitical angle. Comment. (10 marks, 150 words)
34. A dispersed production model and the formation of cooperatives and worker unions can, apart from helping address the many challenges faced by the migrant workers, also result in other significant advantages to India. Comment. (10 marks, 150 words)
35. In the light of the suspension of the MPLADS scheme for 2020-21 and 2021-22, discuss the arguments both in favour of and against the continuation of this scheme. (15 marks, 250 words)
36. Assuring pregnant women access to safe birth and continuum of antenatal and postnatal care during the pandemic assumes great importance. Discuss the challenges involved and measures to be taken for the provision of health services to pregnant women and mothers. (15 Marks, 250 Words).
37. Incidents in the recent past point to a newfound aggressiveness in China's approach towards its already troubled neighbourhood and is an indication that China seems to have come out of its "peaceful rise" policy. Elucidate. (15 Marks, 250 Words).
38. Has the COVID-19 pandemic given an opportunity for Mediation to emerge as an effective dispute resolution tool in India? What are the challenges? (15 Marks, 250 Words)



39. What are the powers of a non-permanent member of the United Nations Security Council? Discuss India's role as a non-permanent member of the UNSC in establishing global order. (15 Marks, 250 Words).
40. Examples from the recent past point to the failure of anti-defection law in curbing the subversion of electoral mandates by legislators, raising questions over the relevance of anti-defection law in current times. Discuss. (15 Marks, 250 Words)
41. Can Russia play a constructive role in the de-escalation of tension between India and China? Suggest mechanisms to reduce tensions between the two countries along the Line of Actual Control. (15 Marks, 250 Words)
42. In the light of the recent border violence in the Galwan valley, between India and China, analyze the strategic significance of the Galwan valley region. (10 marks, 150 words)
43. Discuss the salient features that distinguish elections to the Rajya Sabha from the general elections to the Lok Sabha. (10 marks, 150 words)
44. In the light of the increasing trend of gender based violence during the COVID-19 pandemic, discuss the specific challenges being faced by the victims during the pandemic and suggest suitable policy measures to mitigate such challenges. (10 marks, 150 words)
45. China's current aim may not be primarily to acquire territory, but to force on India a political settlement which will involve India re-orienting its policies to suit the pattern of Chinese global policies. Comment in the light of the evolving situation along the LAC. Discuss what should be India's response to such Chinese objectives. (15 marks, 250 words)
46. Analyze the anti-colonial struggle in Southeast Asia and bring out their similarities and differences with the Indian Independence movement. (10 marks, 150 words)
47. Discuss the causes that contributed to the Russian Revolution and the impact of the revolution on Russia and the world. (15 marks, 250 words)
48. There is a need for the acceptance of the importance of air power in what has been till now a significantly land-centric operational philosophy of India across the LAC. Comment in the light of the advantages enjoyed by the Indian Air Force with respect to the Chinese Air force. (10 marks, 150 words)
49. Discuss the challenges faced by the agricultural sector during the pandemic and evaluate the effectiveness of the recently announced agricultural sector reforms in addressing these concerns. (10 marks, 150 words)
50. The Government e-Marketplace's move to specify the country of origin while registering new products on the portal is at best symbolic and a cosmetic measure. Analyze. (10 Marks, 150 Words)
51. Use of drugs without Randomized Clinical Trials and scientific evidence could end up promoting widespread misuse of drug and a false sense of security amongst the population. Discuss the key concerns associated with such approval by the regulatory bodies in India. (10 Marks, 150 Words)
52. The recent incident of custodial deaths highlights the need to protect the rights of prisoners and calls for strict measures to prevent torture of prisoners at the hand of the police. Discuss. (15 Marks, 250 Words).
53. Examine the dangers posed by illicit drugs to public health and safety. Also, discuss the economic and social consequences of drug abuse. (15 Marks, 250 Words).
54. Pandemic presents an opportunity for India to accelerate the democratisation of knowledge and enable wide distribution of learning opportunities through online education. Critically examine. (15 Marks, 250 Words).
55. Examine the double-edged consequences of COVID-19 pandemic on illegal drug production, supply and consumption. (10 Marks, 150 Words).
56. The U.S. administration's recent move to halt the processing and issuance of non-immigrant work visas would have an adverse impact on both the American and Indian companies and the also on the bilateral relation between the two countries. Comment. (10 marks, 150 words)
57. Discuss the major factors which contributed to the outbreak of the Moplah Rebellion in 1921 and analyze the consequences of the rebellion. (10 marks, 150 words)

58. In the light of the draft environmental impact assessment (EIA) notification, discuss the major concerns associated with the environmental clearance (EC) process propounded by it. Also, analyze the Environment Ministry's arguments for the changes. (15 marks, 250 words)
59. Increased developmental activity in the Arctic region threatens to disturb the fragile ecosystem and affect the biodiversity of the region. Examine. (10 marks, 150 words)
60. Discuss the initiatives taken in India to ensure the availability and accessibility of public data to all. Analyze the significance of the open data principle. (10 marks, 150 words)
61. Despite making significant strides in improving access to education across the country, the learning outcomes of students across all age groups continue to remain below par in India. Discuss the causative factors and suggest remedial measures. (10 marks, 150 words)

# INTERVIEW TRANSCRIPT

**Candidate Details:**

- Name: Khushaal Yadav
- AIR: 28 (CSE-2014)
- Optional: Medical science

**Personal Details:**

- Education: MBBS, AIIMS
- Home town: Rewari, Haryana
- Hobbies: Cryptic Crosswords, Debating, Reading, Listening to Ghazals

**Work-experience**

- Junior Resident (Nephrology), AIIMS, New Delhi

Chairman of the Interview Board: Dr. Mrs. Kilemsungla

**QUESTIONS ASKED BY THE INTERVIEW BOARD****Governance**

- Democracy, structural vs institutional weakness?
- Safeguards for civil servants
- Proactive media, good or bad?
- Education reforms

**Disaster Management**

- How would you respond to a situation like an Earthquake?

**Previous Employment**

- Mr. Khushaal Yadav studied at AIIMS. He was asked, why after cracking one of the toughest exams like AIIMS, he was taking a different path towards the civil service.
- What would be your commitments to medicine as an officer?
- Things you would do for the health sector
- Questions on Telemedicine

**Questions based on Hobbies**

- He was asked to solve a crossword puzzle.
- Questions were asked about Anand and his back to back defeats to Carlsen.

**International Relations**

- How do you see the international relations of India with neighbouring countries considering the water disputes?

**General Questions**

- Why IAS?