POLITY

The governor's powers encompass state bills, government policies, interventions for development across several sectors, and challenges that arise from the formulation and execution of these initiatives

In News, why?

- The Indian Supreme Court (SC) has ruled that the Governor must take the particular steps specified in Article 200 of the Constitution in order to refuse assent to a bill.
- Article 200's main feature is that it requires the Governor to explain why they are not approving the bill and to ask the Legislature to give it another look.

What is the Supreme Court's ruling?

- A governor must abide by Article 200 if they reject a bill.
- According to a ruling by the Supreme Court, a governor must send a law back to the legislature for review if he chooses not to sign it.
- It is against constitutional norms for the Governor to withhold his or her assent without first informing the Legislature that the Bill needs to be re-examined.
- The Governor's message does not compel the elected Legislature to ratify the Bill; they retain the ultimate say in its fate. In other words, the Governor is forced to give his or her permission once the House repasses the returned Bill, whether or not it has been amended.

What authority does the governor have over bills?

Article 200:

- The Indian Constitution's Article 200 describes how a bill passed by a state legislature is forwarded to the governor for approval.
- The governor has three options: to approve the bill, to refuse it, or to reserve it for the president to review.
- The Governor has the option to return the Bill along with a request for the House or Houses to rethink it.

Article 201:

- It specifies that the President may agree to or disagree with a bill that is reserved for his or her consideration.
- The Governor may be instructed by the President to bring the Bill back to the House or Houses of the State Legislature for additional consideration.

Choices Open to the Governor:

- He can either agree to it or return it to the Assembly with a request that certain parts of the bill or the entire bill be reconsidered.
- He might set the bill aside for the president to review. In cases when the state legislature's approved bill jeopardizes the state high court's authority, the reservation is required.

➤ **But the governor may also put the bill on reserve if it contains any of the following provisions:**

- The Directive Principles of State Policy (DPSP) are opposed to the provisions of the Constitution.
- Against the nation's greater interest
- Extremely significant for the country
- Focuses on property acquisition that is required by law under Article 31A of the Constitution.
- Withholding the assent is another choice, although no governor often takes this course of action because it would be very unpopular.

Is it possible for the Governor to exercise his discretionary powers and refuse to sign a bill?

- Although a straightforward interpretation of Article 200 indicates that the Governor may refuse to sign, experts doubt that he is limited to doing so by the Council of Ministers' advice.
- According to Article 154 of the Constitution, the Governor may only carry out his executive duties on the Council of Ministers' recommendation.
- The more significant query is why, when the Assembly passes a bill, a governor should be permitted to abstain from signing it.

What Problems Do Pending Bills Cause?

- Delay in Decision-Making: The state government's ability to operate effectively is impacted when the governor fails to make a decision regarding bills that the legislature has enacted.
- The passage of legislation is delayed by the governor's inaction on bills that the assembly has approved.

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- Weakens the Democratic Process: For political reasons, the Governor, who is appointed by the Centre, may utilize his authority to reject or postpone bills that have been approved by state assemblies. This weakens the democratic process.

Public Perspective:

- Pending bills before the governor are frequently seen by the public as evidence of incompetence or even corruption in the state government, which can harm the administration's standing.

Lack of accountability:

- The Governor gives no explanation for his choice when he refuses to provide his assent.
- The concepts of accountability and transparency in government are compromised by this lack of responsibility.

The Way Ahead

- Governors must abide by Article 200's rules, swiftly informing the State Legislature of any problems they have with a bill and returning it for further consideration. This upholds the legitimacy of the Legislature and guarantees a legitimate procedure.
- Misunderstandings can be prevented by having transparent procedures and clear guidelines. Governors are responsible for their judgments and should justify their denial of a bill in a clear and concise manner.
- The role of governors in the legislative process should be the subject of ongoing debate and legal clarification in order to further streamline processes and prevent conflicts.

ENVIRONMENT

Context: Electrifying fleets to combat urban pollution

Introduction:

This year, the air quality index (AQI) has crossed into the red zone on many occasions in numerous Indian cities. Recurrent increases in air pollution pose a major health risk to millions of people. It is obvious that mitigating techniques need to be given top priority.

Index of air quality (AQI)

- The Union Ministry of Environment, Forests, and Climate Change's Central Pollution Control Board (CPCB) determines the air quality index (AQI).
- AQI reduces complicated data on the quality of the air caused by different contaminants to a single number (the index value), colour, and nomenclature. It measures PM 10, PM 2.5, NO2, SO2, CO, O3, NH3, and Pb, among other contaminants.

CENTRAL POLLUTION CONTROL BOARD'S AIR QUALITY STANDARDS

AIR QUALITY INDEX (AQI)	CATEGORY
0-50	Good
51-100	Satisfactory
101-200	Moderate
201-300	Poor
301-400	Very Poor
401-500	Severe

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- According to two landmark studies on Delhi, the TERI study (2018) and the Urban Emission (2015), PM2.5 and PM10 pollution from the transportation and construction industries is a major cause of urban smog.

Fleet expansion for trucks

- There are already 70 lakh trucks in use in India, and about 9 lakhs more are added to the fleet each year. Every year, trucks in India transport more than 2 trillion tonnes of cargo. These vehicles account for more than 90% of CO_2 emissions from road transportation and consume more than one-fourth of India's oil imports.
- The current fleet of new trucks that are powered by internal combustion engines that burn diesel will increase the amount of PM2.5 pollutions in our cities.
- Although electrified rail freight transit is available in India, it only serves around 20% of the country's total freight volume. India's rate of electric car penetration on the roadways has surpassed 6%, although electric trucks are still a challenge due to upfront costs and charging infrastructure constrain

The next step:

- The government is pushing hard to electrify the fleet of buses and establishes goals for bus aggregators to meet. But the focus also needs to be on dust mitigation and diesel trucks, which are important sources of PM that need to be addressed right once. From the standpoints of sustainability and energy security, this is significant.
- Using solutions quickly is crucial in this urgent time when every breath matters. If India's current desire for 7,750 e-trucks by 2030 comes to pass, it will save more than 800 billion liters of fuel by the year 2050.
- But by 2050, the number of trucks in India's fleet is probably going to surpass 1.7 crore. Therefore, it is necessary to accelerate the switch to e-trucks.
- Public finance is insufficient to achieve the necessary transformational scale. The current imperative is to have a pipeline of bankable projects that are well-structured and capable of drawing both institutional and private financing.
- Although India's success in electrifying over 50% of its three-wheelers is a significant step toward achieving the 2070 net zero goal, truck electrification must take the lead in the transportation sector's decarbonisation efforts

Green freight corridors

- There will be a demonstrative impact across the nation if certain national highways and expressways are designated as green freight corridors.
- To develop green freight corridors in India, expediting feasibility studies, demand aggregation, supplier preparedness, and judicious risk allocation are necessary.
- These corridors can begin to take shape in 500-kilometer segments along roads where there is a lot of truck traffic.

Conclusion:

The much-needed breakthrough for truck electrification in India can be achieved by creative financing mechanisms, the incentivization of charging infrastructure, the facilitation of entrepreneurial initiatives, and a supportive regulatory framework in the nation.

PRELIM FACTS

1.Optical fibres

- Along with quantum optics, fibre optic communication stands on the cusp of a new era.
- Optical fibres are made of thin cylindrical strands of glass.
- The diameter of a typical fibre is close to the diameter of a human hair.
- These fibres can carry information, such as text, images, voices, videos, telephone calls, and anything that can be encoded as digital information, across large distances almost at the speed of light.
- They are strong, light, and flexible, and ideal to be buried underground, drawn underwater, or bent around a spool.

How do optical fibres work?

- These cables works basically on the principle of Total internal reflection.

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- The signals encoded as electromagnetic waves can be fed into one end of an optical fibre and they will reflect and bounce many times between the glass walls as they traverse several kilometres bearing the information in the signals.
- A fibre optic communication system consists of three parts.
- A transmitter encodes information into optical signals (in the form of rapidly blinking light pulses of zeros and ones).
- An optical fibre carries the signal to its destination. There a receiver reproduces the information from the encoded signal.
- Optical waves allow a high data-transmission rate up to several terabits per second in a single fibre.
- Unlike radio or copper-cable-brd communication, fibre cables are also insensitive to external perturbations such as lightning and bad weather.

How these fibres are developed?
- Nowadays, glass fibres are manufactured using the fibre-drawing technique.
- First, a thick glass rod, called preform, of high purity and an engineered refractive index profile is prepared using chemical vapour decomposition.
- The preform is heated to about 1,600 degrees C until it melts and is then drawn into a thin, long fibre.
- The drawing process reduces the fibre's diameter while maintaining its length. The drawn fibre is coated with a protective layer to enhance strength and durability.

Applications
- Fibre optics technology has since been widely used in telecommunication, medical science, laser technology, and sensing.
- Optical fibres are an essential part of this development in communication.

2.Mycoplasma Pneumonia
- Recently, the authorities in China have reported an increase in the incidence of respiratory diseases and have attributed this to the circulation of various pathogens such as mycoplasma pneumonia.
- It's a type of bacteria but acts more like a virus and spreads faster from person to persc.
- It infiltrates both sides of the lungs, increasing cough and breathing difficulties.
- It damages the lining of the respiratory system (throat, lungs, windpipe).

Symptoms
- It is not that rapidly infectious as a virus but it can affect our throat and our nasal cavities and descend to the lungs very quickly, causing pneumonia.
- Signs include the breakup of red blood cells, a skin rash and joint pain.
- Children may report a stuffy or runny nose, sore throat, watery eyes, wheezing, vomitting and diarrhoea.

Who is at risk?
- The bacteria can cause pneumonia in any age group, especially in children, elderly or those with weakened lungs.
- Vulnerable groups, who already have respiratory issues, are prone to developing this infection in a severe form.
- Treatment: There are multiple antibiotics which are effectively cure this infection.

3. AstroSat

India's first multi-wavelength space telescope, AstroSat, has successfully detected its 600th Gamma-ray Burst (GRB), an event named GRB 231122B.

About AstroSat:
- It is India's first dedicated multi-wavelength space observatory aimed at studying celestial sources in X-ray, optical, and UV spectral bands simultaneously.
- AstroSat, with a lift-off mass of 1515 kg, was launched by the Indian launch vehicle PSLV from Satish Dhawan Space Centre, Sriharikota, on September 28, 2015, into a 650 km orbit inclined at an angle of 6 degrees to the equator.
- The spacecraft control center at Mission Operations Complex (MOX) of ISRO Telemetry, Tracking and Command Network (ISTRAC), Bengaluru, manages the satellite during its entire mission life.

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- The minimum useful life of the AstroSat mission is around 5 years.
- It carries a total of five scientific payloads enabling imaging and studying the temporal and spectral properties of galactic and extra-galactic cosmic sources in a wide range of wavelengths on a common platform.

Scientific Objectives:
- To understand high energy processes in binary star systems containing neutron stars and black holes.
- Estimate magnetic fields of neutron stars.
- Study star birth regions and high energy processes in star systems lying beyond our galaxy.
- Detect new briefly bright X-ray sources in the sky.
- Perform a limited deep-field survey of the Universe in the Ultraviolet region.

4. Rat-hole mining

Context: After efforts to release 41 workers trapped in the collapsed Silkyara-Barkot tunnel faced another major setback, the rescuers are now planning to drill through the remaining few meters using the practice of rat-hole mining.

What is rat-hole mining?
- Rat hole mining is a method of extracting coal from narrow, horizontal seams, prevalent in Meghalaya.
- The term "rat hole" refers to the narrow pits dug into the ground, typically just large enough for one person to descend and extract coal.
- Once the pits are dug, miners descend using ropes or bamboo ladders to reach the coal seams.
- The coal is then manually extracted using primitive tools such as pickaxes, shovels, and baskets.
- In the other type of rat-hole mining, called box-cutting, a rectangular opening is made, varying from 10 to 100 sqm, and through that a vertical pit is dug, 100 to 400 feet deep.
- Once the coal seam is found, rat-hole-sized tunnels are dug horizontally through which workers can extract the coal.

Environmental and safety concerns
The mines are typically unregulated, lacking safety measures such as:
- proper ventilation,
- structural support, or
- safety gear for the workers.
- The mining process can cause land degradation, deforestation, and water pollution.
- This method of mining has faced severe criticism due to its hazardous working conditions, environmental damage, and numerous accidents leading to injuries and fatalities.
- Despite attempts by authorities to regulate or ban such practices, they often persist due to economic factors and the absence of viable alternative livelihoods for the local population.

5.Rythu Bandhu Scheme

The Election Commission recently withdrew the permission given to the Telangana government to disburse the financial aid to farmers under the Rythu Bandhu Scheme.

About Rythu Bandhu Scheme:
The Rythu Bandhu scheme, also known as the Farmer's Investment Support Scheme (FISS), is a welfare programme for farmers started by the Telangana government in 2018.

The objective of this scheme is twofold:
- to provide a timely cash grant for the initial investment needs of farmers
- to ensure that farmers do not fall into the debt trap.
- Under the scheme, financial assistance of Rs 5,000 per acre per farmer each season is directly transferred to each farmer's account.
- This financial support was distributed biannually, allocated for both the kharif and rabi harvests.
- The assistance can be used for the purchase of inputs like seeds, fertilizers, pesticides, labour, and other investments in the field operations of Farmer's choice for the crop season.

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Eligibility:
- The scheme is open to all resident farmers in the state who own land.
- Farmers cultivating the land in the forest, a majority of them from Scheduled Tribe communities and having a Record of Forest Rights (ROFR) document, are also eligible to receive benefits under the scheme.
- It is the country's first direct farmer investment support scheme where cash is paid directly to the beneficiary.

ANSWER WRITING

A significant issue in the age of artificial intelligence is deepfakes. Talk about the legal options open to Indian victims of deepfakes and the steps that may be taken to solve these issues.

Deepfakes are artificial intelligence (AI)-manipulated films or audio recordings that purport to show someone saying or doing something they never did. It has become apparent that it poses a serious technological risk with wide-ranging effects.

Issues Raised by Deep fakes:
- **Erosion of Trust and Reputation:** Deepfakes have the potential to cause social instability, propagate false information, and harm people's reputations. When a deep fake video becomes viral, it can be hard to stop the harm from happening since viewers might not be able to tell the difference between real and fake content.
- **Dangers to People and Society:** Deepfakes can be used for election tampering, blackmail, and cyberbullying. There is a great deal of potential for misuse to negatively impact both individuals and society.
- **Difficulty in Detection and Attribution**: Deepfakes are becoming harder to identify and attribute since their sophistication is always changing. Social media companies and law enforcement face difficulties as a result.
- **Legal and Ethical Considerations**: The development of deepfakes has brought up difficult issues pertaining to freedom of speech, privacy, and the limits of artificial intelligence.

Legal Options for Indian Deepfake Victims:
- **Reporting to Social Media Platforms:** Within 36 hours, social media platforms are required by law to handle complaints about cybercrime and take down deepfake content.
- **Cybercrime Complaint:** In addition to contacting a cyber-lawyer for assistance, victims can file a complaint with the National Cybercrime Helpline (1930).
- **Information Technology Act, 2000:** The Information Technology Act addresses cybercrime offenses, such as disseminating false information and forging documents, in Section 66.
- **Copyright Act, 1957**: If deepfakes entail the improper use of intellectual property, they may violate copyright laws.

Actions that can be performed to combat deepfakes:
- **Technical Solutions:** To identify and verify deepfakes, researchers are creating instruments driven by AI. These instruments examine the minute flaws in deepfaked material, like irregularities in eye or facial expressions.
- **Legal and Regulatory Frameworks:** In order to combat deepfakes, governments and international organizations are investigating legal and regulatory frameworks. This entails classifying deepfakes as a type of cybercrime, setting up channels for reporting, and enforcing responsibility on manufacturers and sellers.
- **Public Awareness and Education:** To lessen the influence of deepfakes, it is imperative to educate the public about them. This entails educating individuals about deepfakes, acknowledging the possibility of manipulation, and exercising caution while disseminating anything online.
- **Industry Cooperation and Self-Regulation**: It is the duty of tech businesses and social media platforms to stop deepfakes. This includes investing in detection technologies, implementing clear policies, and working with law enforcement

AI-Powered Countermeasures against Deepfakes:

- **Deepfake Detection:** By utilizing minute variations in facial expressions, skin tones, and speech patterns, artificial intelligence algorithms can be trained to recognize deepfakes.
- **Source Code Watermarking**: Deepfakes can be tracked down and their creators identified by inserting distinct watermarks into the digital content's source code.
- **Fact-Checking Tools**: Social media sites can receive help from AI-powered fact-checking tools in confirming the legitimacy of user-generated material.
- **Media Authentication Standards**: Digital content can be authenticated with the aid of open technological standards such as the Coalition for Content Provenance and Authenticity (C2PA).

Conclusion:

Although deepfakes are a serious threat to our digital civilization, they also provide a chance for creativity and teamwork. Together, regulatory frameworks, public awareness campaigns, and technology developments can help us move toward a time when deepfakes are held more accountable and cause less harm. Creating a thorough strategy that tackles the technical, legal, and moral aspects of this new danger is crucial.

MCQs

1. With reference to Optical fibres, consider the following statements:
   1. These are made of thin cylindrical strands of glass.
   2. These cables works basically on the principle of refraction.
   3. These are used in the field of telecommunication and laser technology.

   How many of the above statements are correct?
   a) Only one
   b) Only two
   c) All three
   d) None

2. Consider the following statements regarding the Mycoplasma pneumonia:
   1. It is a type of bacteria which spreads faster from person to person.
   2. It infects children and those with respiratory issues.

   Which of the statements given above is/are correct?
   a) 1 only
   b) 2 only
   c) Both 1 and 2
   d) Neither 1 nor 2

3. 'AstroSat', that was in the news recently, is a/an:
   a) multi-wavelength space observatory
   b) earth observation satellite
   c) communication satellite
   d) remote sensing satellite

4. Rythu Bandhu Scheme is an investment support scheme for farmers started by which one of the following states?
   a) Uttar Pradesh
   b) Andhra Pradesh
   c) Telangana
   d) Gujarat

5. Consider the following:
   1. Asian Infrastructure Investment Bank
   2. Missile Technology Control Regime
   3. Shanghai Cooperation Organisation

   India is a member of which of the above ?
   a) Only one
   b) Only two
   c) All three
   d) None

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6. 'Investor Risk Reduction Access' (IRRA) platform launched under the aegis of
   a) Reserve Bank of India
   b) Securities and Exchange Board of India
   c) Directorate General of Foreign Trade
   d) None of the above

7. Consider the following statements:
   1. Gondwana coal makes upto 98% of the total reserves and 99% of the production of coal in India.
   2. Gondwana coal forms India's metallurgical grade as well as superior quality coal.
   Which of the statements given above is/are correct?
   a) 1 only
   b) 2 only
   c) Both 1 and 2
   d) Neither 1 nor 2

8. Consider the following statements:
   1. The Governor, being a part of the State legislature, has the authority to utilize his/her constitutional powers to disrupt the regular course of lawmaking within the State.
   2. Once the State legislature reconsiders the Bill and passes it again, whether with or without amendments, and presents it to the Governor for assent, the Governor is obligated to grant assent without withholding it.
   Which of the statements given above is/are correct?
   a) 1 only
   b) 2 only
   c) Both 1 and 2
   d) Neither 1 nor 2

9. Regarding the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), consider the following statements:
   1. The scheme aims to ensure 100 days of employment per financial year for adult members of rural households willing to engage in unskilled manual labor for public works.
   2. The MGNREGA wage rates are fixed according to changes in the CPI-AL (Consumer Price Index Agriculture Labour), which reflects the increase in inflation in rural areas.
   3. It is a Demand-Driven Scheme.
   How many of the statements given above are NOT correct?
   a) One Only
   b) Two Only
   c) All Three
   d) None

10. Which of the following statements about Amyloidosis is correct?
    a) Amyloidosis is a type of cancer that primarily affects the brain.
    b) Amyloidosis is characterized by the accumulation of abnormal proteins called amyloids in tissues and organs.
    c) Amyloidosis is caused by a viral infection.
    d) Amyloidosis is a genetic disorder that cannot be influenced by lifestyle factors.

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