

POLITY**Election Commission Appointments: SC Refuses to stay new law excluding CJI from panel picking CEC, ECs****Why in News?**

- The Supreme Court declined a request for an interim stay of the new law excluding the Chief Justice of India (CJI) from the panel to select the chief election commissioner (CEC) and election commissioners (ECs).

About the New Law to Appoint CEC and ECs

- The CEC and other ECs (Appointment, Conditions of Service and Term of Office) Act 2023 replaced the Election Commission (Conditions of Service of ECs and Transaction of Business) Act 1991.
 - The 1991 Act provides for the appointment, salary, and removal of the CEC and ECs.
- According to the provisions of the new law, the CEC and ECs will be appointed by the President upon the recommendation of a Selection Committee.
 - The Selection Committee will consist of the Prime Minister, a Union Cabinet Minister, and Leader of Opposition or leader of the largest opposition party in the Lok Sabha.
- Under the legislation, a Search Committee headed by the Union Law Secretary will propose a panel of names to the Selection Committee.
- According to the new law, the Salary of the CEC and ECs will be equivalent to Judges of the SC and if the CEC or ECs passes any order, it will not be challenged in any court of law.

Background in which the New Law to Appoint CEC and ECs Introduced

- Article 324 of the Indian Constitution specifies that while the CEC and ECs will be appointed by the President, this is subject to Parliamentary law (if such law exists).
- While this provision places an expectation on Parliament to draft a relevant law, it has not done so up (until now).
- In the absence of such a law, the President has been making appointments as per the recommendations of the Prime Minister.
- In 2023, the Constitution Bench of the SC (in the Anoop Baranwal v. Union of India case) decided to change the process for Election Commission appointments in order to secure their independence.
 - The Bench created a committee comprising the PM, the Leader of the Opposition in Parliament, and the Chief Justice of India.
 - This committee will make recommendations and advise the President on Election Commission appointments until Parliament enacts a separate law on the subject.
- Thus, the new law has been brought in consonance with the direction of the SC with regard to the appointment of CEC and ECs.

Why was the New Law to Appoint CEC and ECs Challenged?

- The petitioners argued that the new law also went against the SC ruling (in the Anoop Baranwal case) which restricted the government's power to appoint CEC and ECs.
- As the new law excludes the CJI from the selection panel, it does not provide an "independent mechanism" for the appointment of the members of the Election Commission of India (ECI).
 - Thus, it is violative of the principle of free and fair elections.
 - As the functioning of the ECI greatly determines the quality of governance and strength of democracy, the fairness and transparency in the procedure of appointment becomes very crucial.
- The petitioners also claimed that the new law was against the concept of separation of powers.
 - The SC had in the past held that mandamus issued by the SC cannot be overruled by the legislature and separation of power is also the basic structure of the Constitution.

SCIENCE & TECHNOLOGY**Centre set to roll out vaccine drive to fight Cervical Cancer****Why in news?**

- The government is set to roll out a human papillomavirus (HPV) vaccination campaign for girls in the 9-14 years age group.
- It is a significant step which has potential to reduce the incidence of cervical cancer in India.

Cervical cancer

- Almost all cervical cancer cases are linked to certain strains of HPV, a common virus that is transmitted through sexual contact.
- The body's immune system usually gets rid of the HPV infection naturally within two years.
- However, in a small percentage of people the virus can linger over time and turn some normal cells into abnormal cells and then cancer.
- It is preventable as long as it is detected early and managed effectively.

Prevalence

- Cervical cancer is the second most common cancer type and the second leading cause of cancer death in women of reproductive age (15-44) worldwide.
- According to the World Health Organization's International Agency for Research on Cancer (IARC-WHO), India accounts for approximately one-fifth of the global burden.
- India witnesses 1.25 lakh cases and approximately 75,000 deaths each year (one woman every eight minutes).
- About 83 per cent of invasive cervical cancer cases are attributed to HPV 16 or 18 in India.

Prevention

- Cervical cancer screening and vaccination are two effective preventive measures.
- There is still little awareness among women about this cancer prevention, and less than 10% of Indian women are screened.
- All women aged 30-49, regardless of symptoms, should be screened for cervical cancer and their adolescent daughters vaccinated against HPV.

Challenges

- Production for public vaccination
 - At present, SII has a production capacity of about 2-3 million doses of Cervavac per year.
 - However, it needs to increase this capacity, with a target of 60-70 million doses.
- Allocation of resources
 - The biggest task will be in allocating adequate resources and manpower for vaccinating the massive demographic of adolescent girls aged between 9 and 14.
- Awareness
 - There is a huge need for stepping up awareness about the disease and the vaccine in the community.
 - Unlike Covid and the vaccination programme, there is very little awareness about cervical cancer.
 - There is an urgent need to have a communication strategy in place and to ensure that any myths circulating online are promptly busted.

News Summary: Key highlights

- Vaccination drive planned in three phases over three years
 - The immunisation drive, planned in three phases over three years.
 - Every year for three years, one-third of girls aged 9 to 14 will get vaccinated.
 - Also, in states where this happens, each new group of 9-year-olds will receive the vaccine during these three years.
- Vaccines to be available for free
 - Currently, the two-dose HPV vaccine is available commercially for about Rs 2,000 per dose.
 - But once the government includes it in its immunisation programme, it will be available for free.
- Vaccine to be use in the immunisation drive
 - Cervavac, an indigenously developed quadrivalent vaccine by the Serum Institute of India (SII) in Pune, will be used for this drive.
 - Cervavac offers protection against four HPV strains – 16, 18, 6 and 11.
 - Besides CERVAVAC, two vaccines licensed globally are available in India;
 - a quadrivalent vaccine (Gardasil, marketed by Merck) and
 - a bivalent vaccine (Cervarix, marketed by Glaxo Smith Kline).
 - These vaccines are costly and hence are unaffordable for the vast majority of Indians.
- Place of vaccination
 - The immunisation drive will be conducted through schools and existing vaccination points.

- Single dose vaccination drive
 - While none of the HPV vaccines available globally recommend a single-dose schedule, the World Health Organisation says that a single-dose regimen can be followed for public health programmes.

PRELIM FACTS**1. I-STEM**

- I-STEM (Indian Science, Technology, and Engineering facilities Map) is launching the Samavesha project at IISc., Bengaluru, on January 16 to enhance research collaboration in India by enhancing accessibility to facilities and labs.

About I-STEM:

- I-STEM (Indian Science, Technology, and Engineering facilities Map) is an initiative of the Office of Principal Scientific Advisor, Government of India.
- It is developed with the concept “One Nation One Portal” for the scientific community, aimed at “Linking Researchers and Resources”.
- It assists users to locate the specific facility they need for their R&D work and identify the one that is either located closest to them or available the soonest.
- The organisation, acting as custodian of the facility may charge the fee for running and maintaining the resources beyond the Project Duration.
- A panel of Experts will be formed in due course to assist the users by providing information to optimally utilise resources available through I-STEM’s S&T Chat Room.
- A Digital Catalogue of Technologies and Technologies Products mandated by the Empowered Technology Group is an integral part of the I-STEM web portal.
- A platform for conducting and hosting industry challenges as mandated by the Empowered Technology Group (ETG) is being developed for Start-ups and Academia for making India “Aatmnirbhar”.
- Through a recent GoI directive, institutions with R&D facilities funded by agencies of the GoI are now mandated to list these facilities on the I-STEM Portal.
- I-STEM protects the IP involved in building the I-STEM Portal, a provisional patent application entitled, "A method and process for efficient use of geographically dispersed resources", has been filed with the Indian Patent Office.

About Project Samavesha:

- The Office of Principal Scientific Advisor, Government of India, is launching a major project called ‘Samavesha’ to revolutionize research collaboration in India by enhancing accessibility to facilities and labs.
- The project is working towards optimizing resource utilization nationwide.
- I-STEM (Indian Science, Technology, and Engineering facilities Map) is planning to conduct around 50 ‘Samavesha’ across India during 2024.

2. BS-VI Norms

- The Supreme Court recently directed the Union government to frame a national policy to phase out heavy-duty diesel vehicles like trucks and trailers, and replace them with BS-VI vehicles.

About BS-VI Norms:

- Bharat stage (BS) emission standards are laid down by the government to regulate the output of air pollutants from internal combustion engine and spark-ignition engine equipment, including motor vehicles.
- India has adopted BS Emission Standards since 2000, modelled on European Union norms.
- The first emission norms with the name ‘India 2000’ were introduced in the year 2000. BS2 and BS3 were introduced in 2005 and 2010, while BS4 norms came into effect in 2017 with stricter emission standards or norms.
- The BS standards regulate tailpipe emissions of air pollutants, including particulate matter, SO_x, and NO_x, as well as carbon monoxide, hydrocarbons, and methane.
- Who sets them? The standards and timeline for implementation are set by the Central Pollution Control Board under the Ministry of Environment, Forests and Climate Change.
- In April 2020, India leapfrogged from BS-IV to the implementation of BS-VI. The central government has mandated that vehicle makers must manufacture, sell, and register only BS-VI (BS6) vehicles from April 1, 2020.

- It is applicable for cars, trucks, buses, three-wheelers, and two-wheelers (motorcycles, scooters, and mopeds).
- This emission norm does not apply to off-highway equipment and vehicles such as tractors, back-hoe loaders, excavators, etc.
- Difference between BS-IV and BS-VI:
 - Both BS-IV and BS-VI are unit emission norms that set the maximum permissible levels for pollutants that an automotive or a two-wheeler exhaust can emit.
 - Compared to BS4, BS6 emission standards are stricter.
 - The main difference is in the amount of sulphur in the fuel, which is reduced from 50 ppm in BS IV fuel to 10 ppm in BS VI fuel for both gasoline and diesel. Hence, BSVI engines produce less harmful emissions and pollutants.

3. SBI Green Rupee Term Deposit (SGRTD) Scheme

- The State Bank of India (SBI) recently introduced the SBI Green Rupee Term Deposit (SGRTD) scheme to mobilize funds to support environment friendly initiatives and projects.

About SBI Green Rupee Term Deposit (SGRTD) Scheme:

- It is an initiative of the State Bank of India (SBI) with the aim of raising money to finance environment-friendly projects.
- The deposit scheme is open to resident individuals, non-individuals, and non-resident Indian (NRI) customers.
- The current framework permits green deposits to be denominated in rupees only.
- It offers investors the flexibility to choose from three distinct tenors: 1,111 days, 1,777 days, and 2,222 days.
- Interest Rate:
 - SGRTD will offer 10 basis points (bps) interest rates below the card rate for retail and bulk deposits for respective tenors.
 - Senior Citizens/ Staff/ Staff Senior Citizens are eligible for an additional interest rate over the applicable rate for the public.
 - The benefit of additional interest shall not be available to NRI Senior Citizens/NRI Staff.
- Pre-mature withdrawals are allowed under the scheme.
- Loan/ overdraft facility will be available against the deposit.

4. HD 63433d

- Astronomers recently unveiled the discovery of an Earth-like planet, younger and closer than any previously identified, named HD 63433d.

About HD 63433d:

- It is an Earth-like exoplanet that orbits a sun-like star called HD 63433 (also known as TOI 1726).
 - The star is about 73 light years away from the sun and is part of the group of stars moving together that make up the constellation Ursa Major.
 - The star HD 63433 shares similarities with our sun in size and type but is significantly younger, at roughly 400 million years old.
- It is the smallest confirmed exoplanet, younger than 500 million years old.
- It's also the closest Earth-sized planet discovered so far, and it's about 400 million years old.
- For comparison, Earth and the rest of our solar system are around 4.5 billion years old, meaning HD 63433 d appears to be just around 10% of the age of our planet.
- It's the third planet found in orbit around its star. This planet is eight times closer to its star than Mercury is to the Sun.
- Because of its proximity to its star, which has 99% the mass of our sun, the planet is tidally locked, just like the moon is to Earth.
 - This means that one side of the planet, its dayside, constantly faces the star and is permanently blasted with stellar radiation, while the cooler night side perpetually faces out into space.
 - This pushes surface temperatures on the planet's dayside up around 2,300 degrees Fahrenheit (1,260 degrees Celsius).
- Its orbit is remarkably short, completing a full revolution around its star every 4.2 days.
- Being so hot, so close to its star, and so small, this planet likely lacks a substantial atmosphere.

5. New Generation Akash Missile

- Defence Research and Development Organisation (DRDO) conducted a successful flight-test of the New Generation AKASH (AKASH-NG) missile from the Integrated Test Range (ITR), Chandipur off the coast of Odisha.

About New Generation Akash missile:

- It is a surface-to-air new generation missile.
- The missile intercepted the high-speed unmanned aerial vehicle at a very low altitude.
- The test has validated the functioning of the complete weapon system consisting of a missile with an indigenously developed radio frequency seeker, launcher, multi-function radar and command, control and communication system.
- This was the first trial of the missile against a live target, which was successfully intercepted and destroyed.
- Features
 - It is a new generation state-of-the-art surface-to-air missile (SAM) for the Indian Air Force (IAF) to destroy high manoeuvring low radar cross section agile aerial threats.
 - This advanced variant comes with an active electronically scanned array (AESA) multi-function radar that features all three functions - search, track and fire control in one platform.
 - It can defend an area 10 times better compared to any short-range SAM and is capable of engaging up to 10 targets simultaneously.
 - It can strike targets up to 40 km as against the earlier variant's maximum range of 30 km.
 - With a canisterised launcher and a much smaller ground system, the missile has been developed with better deployability compared to other similar systems.

ANSWER WRITING

While La Nina is welcomed in India, El Nino triggers anxiety. Discuss.

The weather phenomenon El Nino and La Nina are closely linked to the climate conditions in the Indian subcontinent, and their effects are often felt quite acutely.

El Nino is a weather pattern characterized by the warming of the surface waters of the Pacific Ocean off the coast of South America, while La Nina is the opposite.

La Nina is a climate phenomenon that is welcomed in India because:

- **Increased Rainfall:** La Nina typically brings an increase in rainfall for India and can help alleviate drought conditions. This increase in rainfall is beneficial for Indian agriculture, as it helps to replenish soil moisture, increases crop yields, and improves water resources.
- **Cooler temperature:** La Nina also tends to bring cooler temperatures, which can be beneficial in helping to reduce the effects of heat waves.
- **Water security:** La Nina reduces the risk of droughts and water shortages, which can be devastating to India's agricultural sector.

El Nino triggers anxiety in India because:

- **Decrease rainfall:** El Nino typically brings a decrease in rainfall for India, which can lead to drought conditions. This can have serious implications for Indian agriculture, as it can lead to reduced crop yields and shortages of water resources.
- **For example,** data shows a 60% probability of drought in India in an El Nino year, with a 30% chance of below-normal rain and only a 10% chance of normal rain.
- **Increased temperature:** El Nino also tends to bring higher temperatures, which can exacerbate heat waves and lead to increased health risks. For these reasons, El Nino triggers anxiety in India.
- **Extreme weather events:** El Nino can lead to an increase in the frequency and intensity of extreme weather events, such as cyclones and floods, which can cause destruction of homes and property. This can lead to financial hardship and insecurity, which can cause anxiety.
- **Incidence of diseases:** El Nino can lead to an increase in the incidence of vector-borne diseases, such as malaria and dengue, as well as water-borne diseases, such as cholera. This can lead to fear and anxiety as people worry about their health and the health of their families.

Hence, La Nina is welcomed in India while El Nino triggers anxiety due to the potential negative impacts it can have on the climate and weather patterns in the country.

MCQs

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|---|---|
| 1. Consider the following statements regarding the National Mission for Clean Ganga (NMCG): | 1. It acts as the implementation arm of the National Ganga River Basin Authority (NGRBA). |
|---|---|

2. It consists of a two-tier management structure headed by the Minister of Jal Shakti. 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
2. The term DMH-11 has been in the news recently. It is used in the context of
 (a) Recently discovered DNA editing technology
(b) Herbicide-tolerant transgenic Mustard
 (c) Gene responsible for a type of rare disease
 (d) mRNA vaccine for highly infectious diseases
3. The term Humboldt's enigma is used in the context of which of the following?
 (a) Pattern of having many species at the equator with diversity reducing towards the poles.
(b) Mountain regions generally display higher biodiversity than tropical regions.
 (c) Pattern of having volcanic activity high in the mid-ocean region.
 (d) Increased biodiversity due to climate change.
4. Consider the following statements regarding Strategic Petroleum Reserves (SPRs):
 1. SPRs are located in three locations Visakhapatnam (Andhra Pradesh), Mangalore, and Padur (Karnataka).
 2. International Energy Agency necessitates ensuring oil stock (crude oil plus refined products) levels equivalent to 90 days of imports.
 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
5. With reference to Himalayan Wolf, consider the following statements:
 1. The Himalayan Wolf has been assessed for the first time in the International Union for Conservation of Nature (IUCN)'s Red List.
 2. It is categorised as 'critically endangered' in the IUCN Red List.
 3. The hybridisation with dogs is an emerging threat to the Himalayan wolf population.
 How many of the above statements are correct?
 (a) Only one
(b) Only two
 (c) All three
 (d) None
6. Defence Research and Development Organisation conducted successful flight-test of Akash NG. It is a
 (a) Long-range surface-to-air missile.
 (b) Solid-fueled intercontinental ballistic missile.
 (c) Medium-range supersonic cruise missile.
(d) Short-range surface-to-air missile.
7. In the context of Human Papillomavirus (HPV), consider the following statements:
 1. The HPV Vaccine is covered under Universal Immunisation Programme (UIP).
 2. The best time to start HPV vaccine is when a girl is between 9 and 14 years.
 Which of the statements given above are incorrect?
(a) 1 only
 (b) 2 only
 (c) Both 1 and 2
 (d) Neither 1 nor 2
8. Which one of the following organisations publishes the 'Global Risk Report'?
 (a) World Health Organisation
 (b) United Nation Office for Disaster Risk Reduction
(c) World Economic Forum
 (d) Reporters without Borders
9. Concerning photosynthesis, which statement is accurate?
 (a) Photosynthesis occurs in the mitochondria of plant cells.
 (b) The primary purpose of photosynthesis is to release oxygen into the atmosphere.
 (c) Carbon dioxide is the only gas involved in the process of photosynthesis.
(d) Photosynthesis involves the conversion of light energy into chemical energy.
10. Consider the following:
 1. Calcutta Unitarian Committee
 2. Tabernacle of New Dispensation
 3. Indian Reform Association
 How many of the above establishments is Keshab Chandra Sen associated with?
 (a) Only one
(b) Only two
 (c) All three
 (d) None