

DAILY CURRENT AFFAIRS

By



SOURCES



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2. On campaigning in the name of religion | Explained- The Hindu
3. Technology Development Board and Foundation for Neglected Disease Research (FNDR) with ₹75 Lakhs Grant for Innovative Antibiotic Development Project- PIB
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Important News Articles

GSI

1. El Nino impact leaves Malawi and region on the edge of a hunger crisis- The Hindu

Relevance: Important Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone. etc., geographical features and their location-changes in critical geographical features (including water-bodies and ice-caps) and in flora and fauna and the effects of such changes.

Prelims Takeaway

- Map Based question
- El nino

News:

- The southern African nation of Malawi has **declared a state of disaster caused by drought in 23 of its 28 districts.**
- Its president has also said Malawi urgently needs more than \$200 million in humanitarian assistance, less than a month after neighbouring Zambia also appealed for help.

Key Highlights

- A third country, Zimbabwe, has also seen much of its crops decimated
 - And is considering following suit and declaring a drought disaster, underscoring concerns raised by the U.N. World Food Programme (WFP) late last year
 - That numerous nations in southern Africa were on the brink of a hunger crisis because of the impact of the ongoing El Niño weather phenomenon.
- Last month was the driest February in 40 years for Zambia and Zimbabwe, according to the WFP's seasonal monitor while Malawi, Mozambique, and parts of Angola had "severe rainfall deficits.
- El Niño is a natural, recurring weather phenomenon that **affects weather worldwide, including causing below-average rainfall in southern Africa.**
- Some scientists say climate change is making **El Niños stronger and their impacts more extreme.**
- The 2015-2016 El Niño brought a severe drought to southern Africa, the region's worst in 35 years, for example-
 - Before the national disaster announcements by Malawi and Zambia, the WFP
 - USAID had already launched a programme to feed 2.7 million people in rural Zimbabwe facing food shortages — nearly 20% of that country's population.
- **Zambia** is also currently **experiencing a major cholera** outbreak as well.

2. On campaigning in the name of religion | Explained- The Hindu

Relevance: Social empowerment, communalism, regionalism & secularism

News:

- Recently the Bharatiya Janata Party (BJP) lodged a complaint with the Election Commission of India (ECI) against Rahul Gandhi for hurting the sentiments of Hindus through his remark on 'shakti'.

Prelims Takeaway

- Model Code of Conduct
- RPA 1951

Corrupt Electoral Practices:

- The Representation of People Act (RP Act) prohibits appeals to voters based on religion, race, caste, community, or language (Section 123(3)).
- This includes attempts to promote hatred between groups (Section 123(3A)).
- Violation can lead to disqualification from contesting elections for up to six years.

Model Code of Conduct (MCC):

- This non-binding code discourages parties and candidates from exploiting religious differences for votes.
- It prohibits using religious places for campaigning.

Stricter Law Since 1961:

- An amendment removed the requirement for "systematic" appeals to be considered corrupt.
- Now, even a single appeal based on religion is discouraged.

Challenges and Enforcement:

- Despite the law, some political leaders exploit religion for votes.
- While some face legal cases, convictions are rare (e.g., Bal Thackeray in 1995).
- The Election Commission of India (ECI) can only briefly bar campaigning for MCC violations.

Landmark Supreme Court Ruling (Abhiram Singh vs CD Commachen, 2017):

- Appealing to voters based on their own religion is also illegal.
- Elections are secular exercises, and religion is a personal matter.

Way forward

- Political parties can address grievances related to religion, caste, etc., through policy proposals.
- This should be done without jeopardizing national unity.
- Religious leaders should avoid endorsing candidates.
- ECI and courts need stronger mechanisms to enforce the law.

GS II**3. Technology Development Board and Foundation for Neglected Disease Research (FNDR) with ₹75 Lakhs Grant for Innovative Antibiotic Development Project- PIB**

Relevance: Science and Technology- developments and their applications and effects in everyday life.

News:

- In an innovative initiative aimed at propelling healthcare innovation forward, the **Technology Development Board has sanctioned a grant of ₹75 Lakhs towards the project "ANAGRANINF**
- It is Development of a Novel Class of Antibiotics Against Gram-Negative Bacterial-Infections,

Prelims Takeaway

- Gram-negative bacteria
- Drug-Resistant Bacteria

New Antibiotic to Fight Drug-Resistant Bacteria

- This project aims to develop a new type of antibiotic to combat serious infections caused by gram-negative bacteria.
- These bacteria are especially difficult to treat because they have multiple ways to resist drugs.

What are gram-negative bacteria?

- They have a different cell wall structure than other bacteria, making them harder to kill with antibiotics.
- They can quickly develop resistance to new drugs and share this resistance with other bacteria.
- These bacteria can cause serious infections like pneumonia, bloodstream infections, and surgical site infections.

The Project's Goal

- Develop a new drug (antibiotic) that can target a specific enzyme (FabI) in gram-negative bacteria.
- This new drug would be effective against these hard-to-treat infections.

Who is Funding This Project?

- The Technology Development Board (TDB) is a government agency that supports the development of new technologies in India.
- The TDB funds research projects and helps companies bring new technologies to market.

4. Preventive detention by routine exercise of powers must be nipped in bud: Supreme Court- Indian Express

Relevance: Structure, organization and functioning of the Executive and the Judiciary—Ministries and Departments of the Government; pressure groups and formal/informal associations and their role in the Polity.

News:

- The Supreme Court has set aside a Telangana High Court order rejecting a detenu's appeal. **preventive detention is a draconian measure**

Prelims Takeaway

- Preventive Detention
- Punitive detention

- It Observed that and any such move based on a capricious or routine exercise of powers must be nipped in the bud

Preventive Detention

- India balances the need for security with individual liberties through preventive detention laws.
- These laws allow authorities **to hold people without a trial if they believe those people might commit crimes in the future.**
- The Indian Constitution protects people from being arrested unfairly.
- It allows preventive detention, but with safeguards.
- For instance, detention can't last more than three months without a review board finding a reason to extend it.
- Detainees also have the **right to know why they're being held** (unless revealing that reason would harm public safety).
- The power to make these laws is divided.
- The national government can make laws for national security reasons, while both national and state governments can make laws for public order or essential services.
- Examples of preventive detention laws in India include **the National Security Act and state-specific Public Safety Acts.**
- These laws allow authorities to detain people for up to a year without charges, but with a review process.

GS III

5. Water crisis in Bengaluru linked to urbanisation of Kodagu' -The Hindu

Relevance: Conservation, environmental pollution and degradation, environmental impact assessment.

News:

- The Save Kodagu and Cauvery Campaign has said that one of the reasons for the water shortage in Bengaluru is the rampant and unchecked commercial land conversion and urbanisation of Kodagu

Key Highlights

Land conversion

- **Gram panchayats should not issue NOCs** for land conversion for commercial purposes.
- If there was a continuous growth of Bengaluru and the destruction of Kodagu's landscape, it would be a classic case of burning the candle at both ends.
- "The Cauvery is the lifeline not only of Bengaluru, but **also for the farmers of Mandya and the people of Mysuru,**
- If the population of Kodagu increases from its present six lakh to 10 lakh or more, owing to proliferation of layouts and colonies
 - In case there is a failure of rains in the district resulting in drought conditions and water shortage, then the government can invoke the National Disaster Act.
- The government can invoke the Act by which the borewells and water tanks of coffee growers across Kodagu can be seized
 - It will not be permitted to carry out any irrigation in the district which will result in coffee yield reducing drastically

Reasons for the Water Crisis in India

- **Rising water demand-** According to NITI Aayog, India's water demand is increasing at a rapid rate. India's water demand will be twice the available supply by 2030.
 - Also, the rate of depletion of groundwater in India during 2041-2080 will be thrice the current rate.
- **Groundwater use for agriculture** – There is high groundwater usage in agriculture due to faulty cropping patterns.
 - For ex- Water-intensive paddy cultivation in the states of Punjab and Haryana.

Prelims Takeaway

- NITI ayoge
- Water crisis

- **Encroachment of Natural Water Bodies-** There has been destruction of lakes and small ponds to meet the infrastructure needs of burgeoning populations.
 - For ex- Encroachment of lakes in Bengaluru.
- **Climate Change-** Climate Change has led to erratic monsoon and reduced water levels in many rivers. This has induced water crisis in India.
 - Discharge of Pollutants- There has been contamination of groundwater resources by the discharge of industrial chemicals, sewers and improper mining activities.

6. On semiconductors: how they are made, used and who manufactures them- The Hindu

Relevance: Science and Technology- developments and their applications and effects in everyday life.

Prelims Takeaway

- Silicon
- Semiconductor

News:

- Semiconductors **represent a distinct class of materials** that possess some of the electrical properties of both conductors and insulators.
- Like a faucet which can be used to control the flow of water, semiconductors can be used to control the flow of electric currents, and with exquisite precision.

Key Highlights

- The most important **type of semiconductor is the transistor**.
- At the dawn of the era of modern electronics, the first integrated circuits featured four transistors.

How do semiconductors benefit us?

- Smartphones and computers showcase the pinnacle of semiconductor technology but semiconductors influence nearly every facet of our lives.
- Semiconductors also power **'smart' air-conditioners' ability to regulate the temperature as well as space telescopes'**
 - Ability to capture both awe-inspiring and scientifically interesting images in the depths of the universe, and many other technologies in between.
- Many of the solutions to the 21st century's most important crises — including artificial **intelligence, electric vehicles, space exploration, robotics, personalised healthcare, and environmental monitoring**
- Such semiconductor technology facilities foster innovation, create high-paying jobs, nurture the potential for deep-tech start-ups
 - And both draw from and feed into advances in materials science, computer engineering, big data, optics, chemical engineering, and chip design, to name a few.
- Owing to their **role in sectors like defence and automotives**, semiconductors have also emerged as a focal point of geopolitical interest
- India, meanwhile, has been trying to use its expertise in design to establish semiconductor manufacturing plants.
- One hopes this strategic push plus the potential of our youth will translate to numerous opportunities for the country to seize the international semiconductor industry.

7. Is Holi becoming warmer year on year? This is what scientists say- the tribune

Relevance: Conservation, environmental pollution and degradation, environmental impact assessment.

Prelims Takeaway

- Global warming
- CO₂

News:

- **The probability of temperatures soaring to 40 degrees Celsius around the festival of Holi** late March has multiplied due to climate change, according to an analysis of temperature data since 1970.

Northern India Heating Up the Most

- A study reveals that northern and western India have seen the biggest temperature increases in March compared to 1970.

- Jammu and Kashmir has warmed the most, with average temperatures rising by about 2.8 degrees Celsius.

Warming Spreads in April

- April's warming is more widespread across the country.
- **Mizoram takes the top spot** with a nearly 1.9-degree Celsius increase since 1970.

Global Warming: The Culprit

- The massive release of heat-trapping greenhouse gases has caused global temperatures to rise.
- Compared to the 1850-1900 average, the world's average temperature has increased by 1.1 degrees Celsius.
- Since 1900, the Indian subcontinent's average annual temperature has risen by 0.7 degrees Celsius.
- The gradual rise in earth's temperature known as global warming is typically brought on by the greenhouse effect
 - Which is brought on by elevated amounts of carbon dioxide, CFCs, and other pollutants.
- It has an immense impact on the global climate as well. Read here to know more about it.
- Global warming is the long-term heating of the Earth's surface observed since the pre-industrial period (between 1850 and 1900) due to human activities.
- The leading cause was primarily fossil fuel burning, which increases heat-trapping greenhouse gas levels in Earth's atmosphere.
- This term is not interchangeable with the term "climate change."

8. GAIL to commission its first green hydrogen project in April: Report- Indian Express

Relevance: Conservation, environmental pollution and degradation, environmental impact assessment.

News:

- State-run natural gas company GAIL (India) Ltd plans to commission its first green hydrogen project in central India in April, three company sources said.

Green Hydrogen

- Under the highly ambitious National Green Hydrogen Mission, India intends to be "the Global Hub for the Production, Use, and Export of Green Hydrogen"
 - and "to assume technology and market leadership." The mission's goal is to generate 5 million tonnes of green hydrogen for domestic use.
- Green hydrogen is a clean energy source produced through the electrolysis of water using renewable energy sources such as wind, solar, and hydro power.
- It has the potential to become a key player in the transition to a carbon-free economy and can help mitigate climate change.
- The hydrogen produced can be stored and used as a fuel for transportation, industry, and agriculture.

Benefit of green hydrogen

- Reducing greenhouse effect
- Reducing india import bill
- Energy Security and Independence
- Creating New Industries and Jobs

Prelims Takeaway

- Green hydrogen
- Hydrogen

Editorials, Gists and Explainers

9. Live Coral cover in Gulf of Mannar down to 27%- Indian Express

Relevance: Conservation, environmental pollution and degradation, environmental impact assessment.
context:

- **Climate change and anthropogenic pressures are overpowering corals'** resilience, but Tamil Nadu forest department's community-based initiatives have come as a ray of hope.

- **The Gulf of Mannar on the southeast coast of India** is a major reef region with a significant spatial extent of corals.

Key Highlights	Chief drivers
<ul style="list-style-type: none"> • The islands and the surrounding shallow coastal waters were declared the Gulf of Mannar Marine National Park (GOMMNP) by the Tamil Nadu government in 1986. • The beautiful looking coral reefs not only serve as nursing grounds for fishes, but act as natural submerged breakwaters providing coastal protection and flood reduction through wave breaking. • The Inter-Governmental Panel for Climate Change (IPCC) has predicted that global coral reefs would decline by 70-90% with global warming of 1.5°C by 2100 and go extinct, if it is 2°C or higher. • During the recently concluded TN Climate Summit 2.0, a study report titled: 'Coral reefs of the Gulf of Mannar: was released. • It showed that the live coral cover in the region had decline from 37% in 2005 to 27.3% in 2021. 	<ul style="list-style-type: none"> • Coral bleaching and ocean acidification due to climate change were primary reasons behind this colossal loss. • Annual surveys between 2005 and 2021 show that the coral cover was increasing and reached an all-time high of 42.9% in 2009. • The complete halt of coral mining activities after the 2004 Indian Ocean tsunami increased the trend. • For instance, Shingle island suffered the most with the loss of 72% of its coral cover followed by Krusadai and Pullivasal islands, which lost more than 55%, as per the SDMRI report. • Going by the climate models, there would be severe coral breaching this year. • Besides this, mechanised trawling, push net operation, shore seine, trap fishing, surface-supplied diving, spear-fishing, purse seine, bottom settling gill nets, ornamental fish collection and seaweed collection are some fishing activities that damage the fragile reef ecosystems of the Gulf of Mannar. • However, the primary threats responsible for the declining trend are coral bleaching events <ul style="list-style-type: none"> ◦ disease outbreaks, algal blooms and invasion of the exotic red alga, Kappaphycus alvarezii. <p>Saving sinking islands</p> <ul style="list-style-type: none"> • Vaan island. • The island had split into two due to severe erosion after which artificial reef modules were deployed, which worked like magic. <p>Community engagement reduces anthropogenic pressure</p> <ul style="list-style-type: none"> • to reduce the anthropogenic pressures on the reserve, green jobs are being created by providing concessional micro-credit a small amount of capital to fund alternative livelihood. • Community-based eco-tourism is one of the methods to generate new green jobs. • Last year, UNESCO has awarded Bakan the 2023 Michel Batisse Award for Biosphere Reserve Management.



10. What is the district election management plan? | Explained- The Hindu

Relevance: Structure, organization and functioning of the Executive and the Judiciary—Ministries and Departments of the Government; pressure groups and formal/informal associations and their role in the Polity.

context:

- conduct of elections has become increasingly complex and multifaceted, requiring meticulous planning and execution to ensure a free, fair, and inclusive electoral process.
- A cornerstone of this planning process is the District Election Management Plan (DEMP), a comprehensive document that uses statistics and analysis to ensure the smooth conduct of elections.

District Election Management Plan (DEMP)	Function of the DEMP:
<ul style="list-style-type: none"> The Election Commission of India (ECI) creates a detailed plan, called the District Election Management Plan (DEMP), to ensure smooth voting experiences. This plan is prepared well in advance and updated as needed. The DEMP works like a blueprint for running an election in a district. It includes information about the district's voters and polling stations, along with strategies to make voting accessible for everyone. This might involve adding ramps for disabled voters or setting up voting booths in far-off villages. 	<ul style="list-style-type: none"> District profile: This provides a background of the area, including demographics and the number of polling stations. Polling station accessibility: The plan focuses on making sure all polling stations have basic amenities like electricity and toilets. Special attention is given to helping voters with disabilities and senior citizens cast their votes. Voter education: The DEMP includes a plan to increase voter turnout, especially in areas with historically low participation. This might involve using social media or working with community groups. Staffing the election: The DEMP ensures there are enough trained election workers to run the polls smoothly. This involves creating a database of potential workers and planning how to fill any gaps. Security: The plan works with the police to make sure polling stations are safe and secure. This includes having a plan to transport and maintain Electronic Voting Machines (EVMs) and Voter Verifiable Paper Audit Trails (VVPATs). Overall, the DEMP is a comprehensive plan that ensures well-organized and accessible elections. It's a great example of how careful planning, data analysis, and collaboration can lead to success.

Mentorship

India

Quick Look

1. Global Energy Monitor (GEM)

- GEM develops and shares information in support of the worldwide movement for clean energy.
- By studying the evolving international energy landscape and creating databases, reports, and interactive tools that enhance understanding, GEM seeks to build an open guide to the world's energy system.
- Users of GEM's data and reports include the International Energy Agency, United Nations Environment Programme, the World Bank, and the Bloomberg Global Coal Countdown.

2. Teesta River

- It is a trans-Himalayan River flowing through the Indian states of Sikkim and West Bengal and, Rangpur in Bangladesh.
- It is a tributary of the Brahmaputra River.
- It originates in the Himalayas and flows through the Indian States of Sikkim and West Bengal before entering Bangladesh, where it flows into the Brahmaputra.
- It has a total length of about 309 kilometers.
- The flow of the Teesta is greatest during the summer (June to September), when the monsoon rains are heaviest and glaciers supply abundant meltwater.

3. La Nina

- La Nina means The Little Girl in Spanish. It is also sometimes called El Viejo, anti-El Nino, or simply "a cold event."
- La Nina events represent periods of below-average sea surface temperatures across the east-central Equatorial Pacific.
- It is indicated by sea-surface temperature decreased by more than 0.9°F for at least five successive three-month seasons.
- La Nina event is observed when the water temperature in the Eastern Pacific gets comparatively colder than normal, as a consequence of which, there is a strong high pressure over the eastern equatorial Pacific.

4. Right Whales

- Right whale, (family Balaenidae) is any of four species of stout-bodied whales having an enormous head measuring one-quarter to one-third their total body length.
- While they differ genetically, and in conservation status, they do not differ significantly in their external appearance. These whales were hunted for their oil and their strong, elastic baleen.
- They have considerable economic value of these products, this cetacean gained its name because it was the "right whale" to take.
- When feeding, these whales swim slowly and use baleen to eat schools of small, shrimp-like crustaceans, called zooplankton.
- Right whales were nearly exterminated by uncontrolled hunting,
 - the International Union for Conservation of Nature and Natural Resources (IUCN) considers two of the four species as endangered. They have been completely protected by international agreement since 1946.

5. Electoral Trusts

- These are trusts set up by companies with the objective to distribute the contributions received from other companies and individuals to political parties.
- The companies which are registered under section 25 of the Companies Act, 1956, are only eligible to make an application for approval as an electoral trust.
- The names of electoral trusts, currently, do not indicate the name of the company/group of companies which set up the trusts.
- For administrative expenses, the electoral trusts are permitted to set aside a maximum of 5 percent of the total funds collected during a financial year.



Mentorship
India

Prelims Track Question

Q1. Consider the following statements

Statement I: During El Niño, upwelling weakens which results in brings water from the depths to the surface

Statement II: Weaken upwelling bring nutrient rich cold water to the surface, which affects blue economy badly

Which one of the following statements is correct?

- A. Statement I is correct but statement II is incorrect
- B. Statement I is incorrect but Statement II is correct
- C. Both Statement I and Statement II are correct and Statement II is the correct explanation for Statement I
- D. Both Statement I and Statement II are incorrect and Statement II is not the correct explanation for Statement I

Q2. Consider the following with respect to Representation of People Act, 1950

1. Section 29C of the Act Required all political parties to declare any contributions higher than Rs. 20,000.
2. The act lays down procedures for delimitation of constituencies.
3. It lays procedure for the preparation of electoral rolls and the manner of filling seats and the qualification of voters.

How many of the statements given above is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

Q3. Project "ANAGRANINF is related to which of the following :

- A. to incentivize investments in dairy processing, product diversification, meat processing, animal feed plants
- B. will incentivize manufacturers to increase investment.
- C. to avail benefits under RoDTEP along with other products.
- D. aims to develop a new type of antibiotic to combat serious infections caused by gram-negative bacteria.

Q4. Consider the following statements

Statements I: Under punitive detention, a person is detained without trial and conviction by a court and has no right of personal liberty guaranteed by Article 19 or Article 21

Statements II: under preventive detention a detainee can be punished for an offense committed by him after trial and conviction in a court and have right to be informed of the grounds of arrest

Which one of the following statements is correct?

- A. Statement I is correct but statement II is incorrect
- B. Statement I is incorrect but Statement II is correct
- C. Both Statement I and Statement II are correct and Statement II is the correct explanation for Statement I
- D. Both Statement I and Statement II are incorrect and Statement II is not the correct explanation for Statement I

Q5. Consider the following statements

1. As per NITI Aayog, India's water demand is increasing at a rapid rate and water demand will be twice the available supply by 2030.
2. There is high groundwater usage in agriculture due to faulty cropping patterns.
3. Water-intensive paddy cultivation in the states of Punjab and Haryana, encroachment of Natural Water Bodies are few reasons behind water crisis

How many of the statements given above is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

Q.6 Consider the following statements about semiconductors:

1. Semiconductors are pure elements with high electrical conductivity.
2. Doping a semiconductor with impurities creates regions with different electrical properties.
3. Transistors are the basic building blocks of integrated circuits (ICs).

How many of the statements given above is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

Q7. Consider the following statements about global warming:

1. Global warming is primarily caused by the depletion of the ozone layer.
2. The greenhouse effect is a natural phenomenon that contributes to global warming.
3. Melting glaciers and polar ice caps are a major consequence of global warming.

How many of the statements given above is/are INcorrect?

- A. Only one
- B. Only two
- C. All three
- D. None

Q8. Which of the following are benefit of green hydrogen:

1. Benefit of green hydrogen
2. Reducing greenhouse effect
3. Reducing india's import bill

How many of the given option above is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

Q9. Consider the following statements about the Gulf of Mannar:

1. It is located on the western coast of India.
2. It is the first biosphere reserve in India to include islands.
3. It is known for its coral reefs and marine biodiversity.

How many of the statements given above is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

Q10. Consider the following statements about District Election Management Plan (DEMP)

1. Gram panchayats have been given the charge of adding ramps for disabled voters or setting up voting booths in far-off villages.
2. District profile of DEMP provides a background of the area, including demographics and the number of polling stations.
3. The DEMP includes a plan to increase voter turnout, especially in areas with historically low participation

How many of the statements given above is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

Prelims Track Answer**Answer 1 Option D is correct****Explanation**

- El Niño also has a strong effect on marine life off the Pacific coast. During normal conditions, upwelling brings water from the depths to the surface; this water is cold and nutrient rich.
- During El Niño, upwelling weakens or stops altogether. Without the nutrients from the deep, there are fewer phytoplankton off the coast.
- This affects fish that eat phytoplankton and, in turn, affects everything that eats fish.
- The warmer waters can also bring tropical species, like yellowtail and albacore tuna, into areas that are normally too cold. **Hence, both statements are incorrect.**

Answer 2 Option B is correct**Explanation**

- AS per Section 29C of the Representation of People Act, 1951, before it was amended by the Finance Act, 2017, required all political parties to declare any contributions higher than Rs. 20,000. **Hence, statement 1 is incorrect.**
- Electoral Bonds Scheme violates the right to information under Article 19(1)(a) of the Constitution
- Key Provisions of Representation of the People Act (RPA), 1950
 - Lays down procedures for delimitation of constituencies. **Hence, statement 2 is correct.**
 - Provides for the allocation of seats in the House of the People and in the Legislative Assemblies and Legislative Councils of States.
 - Lays procedure for the preparation of electoral rolls and the manner of filling seats.
 - Lays down the qualification of voters. **Hence, statement 3 is correct.**

Answer 3 Option D is correct**Explanation**

- In an innovative initiative aimed at propelling healthcare innovation forward, the Technology Development Board has sanctioned a grant of ₹75 Lakhs towards the project "ANAGRANINF
- It is Development of a Novel Class of Antibiotics Against Gram-Negative Bacterial-Infections,

- New Antibiotic to Fight Drug-Resistant Bacteria
- This project aims to develop a new type of antibiotic to combat serious infections caused by gram-negative bacteria.
- These bacteria are especially difficult to treat because they have multiple ways to resist drugs. **Hence, option D is correct.**

Answer 4 Option D is correct**Explanation**

- preventive detention means detention of a person without trial and conviction by a court.
- detainee under preventive detention has no right of personal liberty guaranteed by Article 19 or Article 21.
- A detainee under punitive detention can have the right of personal liberty guaranteed by Article 19 or Article 21.
- It is to punish a person for an offense committed by him after trial and conviction in a court.
- Right to be informed of the grounds of arrest, Right to consult and be defended by a legal practitioner are available to detainee under punitive detention. **Hence, both statements are incorrect.**

Answer 5 Option C is correct**Explanation**

- Reasons for the Water Crisis in India
- Rising water demand- According to NITI Aayog, India's water demand is increasing at a rapid rate. India's water demand will be twice the available supply by 2030.
- Also, the rate of depletion of groundwater in India during 2041-2080 will be thrice the current rate.
- Groundwater use for agriculture – There is high groundwater usage in agriculture due to faulty cropping patterns.
- For ex- Water-intensive paddy cultivation in the states of Punjab and Haryana.
- Encroachment of Natural Water Bodies- There has been destruction of lakes and small ponds to meet the infrastructure needs of burgeoning populations. **Hence, all statements are correct.**

Answer 6 Option B is correct**Explanation**

- Semiconductors are not pure elements. They are materials with conductivity between conductors and insulators. Their conductivity can be controlled by adding impurities (doping). **Hence, statement 1 is incorrect.**
- Doping a semiconductor with carefully chosen impurities (dopants) creates P-type and N-type regions. This allows control of electrical current flow, forming the basis of electronic devices. **Hence, statement 2 is correct.**
- Transistors are fundamental building blocks of ICs. They can amplify or switch electronic signals, enabling complex electronic circuits found in computers and other devices. **Hence, statement 3 is correct.**

Answer 7 Option A is correct**Explanation**

- Ozone depletion primarily affects higher atmospheric layers and is linked to issues like increased UV radiation reaching Earth's surface. While it can indirectly affect climate, it's not the main driver of global warming. **Hence, statement 1 is incorrect.**
- The greenhouse effect is a natural process where certain gases in the atmosphere trap heat from the sun, keeping the planet warm. However, human activities like burning fossil fuels have increased the concentration of these greenhouse gases, leading to an enhanced greenhouse effect and global warming. **Hence, statement 2 is correct.**
- Melting glaciers and polar ice caps are a significant consequence of global warming. Rising temperatures cause them to melt at a faster rate, leading to rising sea levels and disrupting weather patterns. **Hence, statement 3 is correct.**

Answer 8 Option C is correct**Explanation**

- Benefit of green hydrogen
- Reducing greenhouse effect
- Reducing india import bill
- Energy Security and Independence
- Creating New Industries and Jobs. **Hence, all options are correct.**

Answer 9 Option B is correct**Explanation**

- The Gulf of Mannar is located on the eastern coast of India, between mainland India and the west coast of Sri Lanka. **Hence, statement 1 is incorrect.**
- The Gulf of Mannar Biosphere Reserve was India's first biosphere reserve to include islands. It encompasses 21 islands and adjoining marine zones. **Hence, statement 2 is correct.**
- Correct: The Gulf of Mannar is renowned for its extensive coral reefs and rich marine biodiversity. It provides habitat for various marine animals, including dolphins, sea turtles, and the endangered dugong. **Hence, statement 3 is correct.**

Answer 10 Option B is correct**Explanation**

- The Election Commission of India (ECI) creates a detailed plan, called the District Election Management Plan (DEMP), to ensure smooth voting experiences. **Hence, statement 1 is incorrect.**
- It includes information about the district's voters and polling stations, along with strategies to make voting accessible for everyone.
- This might involve adding ramps for disabled voters or setting up voting booths in far-off villages. **Hence, statement 2 is correct.**
- District profile: This provides a background of the area, including demographics and the number of polling stations.
- Voter education: The DEMP includes a plan to increase voter turnout, especially in areas with historically low participation. This might involve using social media or working with community groups. **Hence, statement 3 is correct.**

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