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Of

July

2020

(27th July to 1st August)

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1. Geography

Click [here](#) to watch the following questions on YouTube

1. The term “Deep Ecology” is often in news. Identify the correct option in context with the same:

- A. The concept suggests environmental movement and philosophy which regards human life as just one of many equal components of a global ecosystem.
- B. The concept suggests that the world’s societies need to set limits on human-caused disturbances to tightly linked Earth system processes.
- C. The concept upholds the importance of Deep Ocean Systems as Abyssal deep-sea ecosystems are huge and cover 54% of the Earth's surface.
- D. The concept refers to is the process of retrieving mineral deposits from the deep sea – the area of the ocean below 200 m.

Answer: A

Explanation

Deep ecology is an environmental philosophy promoting the inherent worth of living beings regardless of their instrumental utility to human needs, plus a restructuring of modern human societies in accordance with such ideas.

2. Which one of the following regions of India has a combination of mangrove forest, evergreen forest and deciduous forest?

- A. North Coastal Andhra Pradesh
- B. South-West Bengal
- C. Southern Saurashtra
- D. Andaman and Nicobar Islands

Answer: D

Explanation

Important types of forest include Tropical Evergreen vegetation, Moist Deciduous vegetation and mangrove vegetation.

3. Barring the exceptions; if any; find the correct option in context with Ocean Currents:

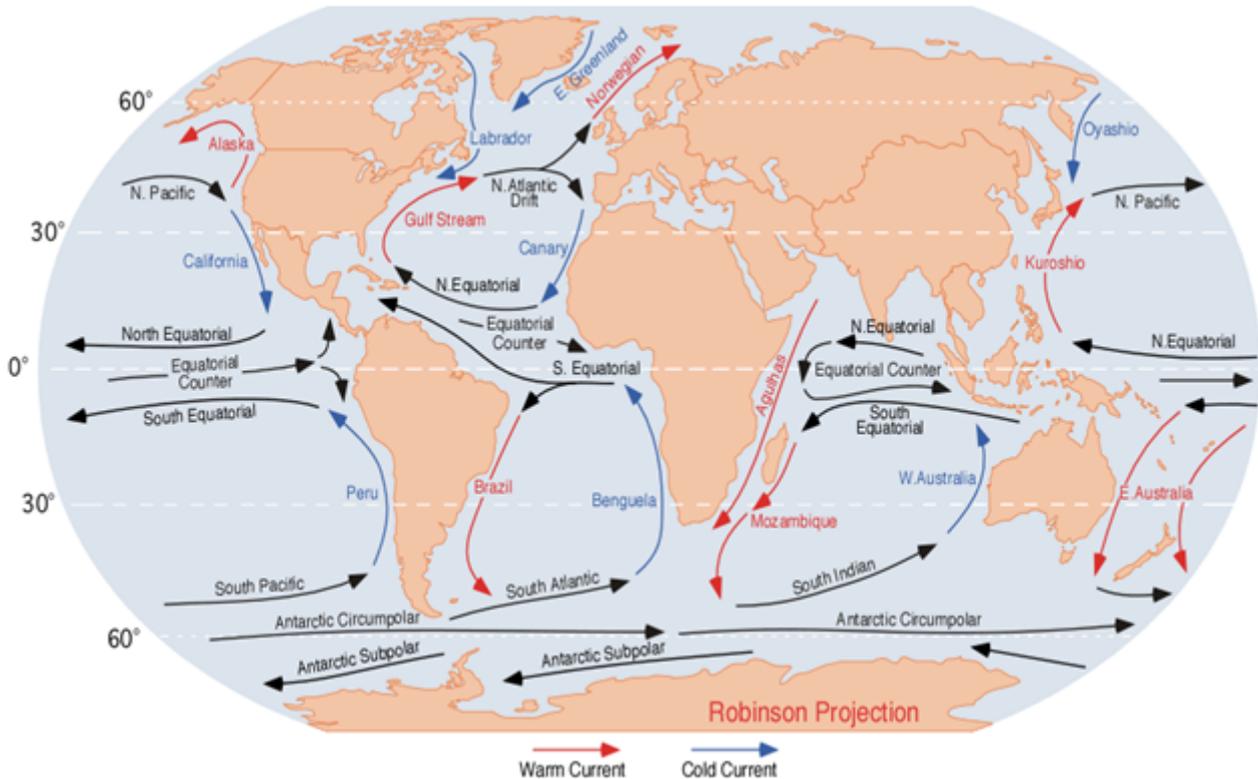
- 1. In the lower latitudes, the warm currents flow on the eastern shores and cold on the western shores.
- 2. In the higher latitudes, the warm currents move along the western shores and the cold currents along the eastern shores.

- A. Only 1
- B. Only 2
- C. Both 1 and 2

D. Neither 1 nor 2

Answer: C

Explanation



4. Which of the following is/are correctly matched?

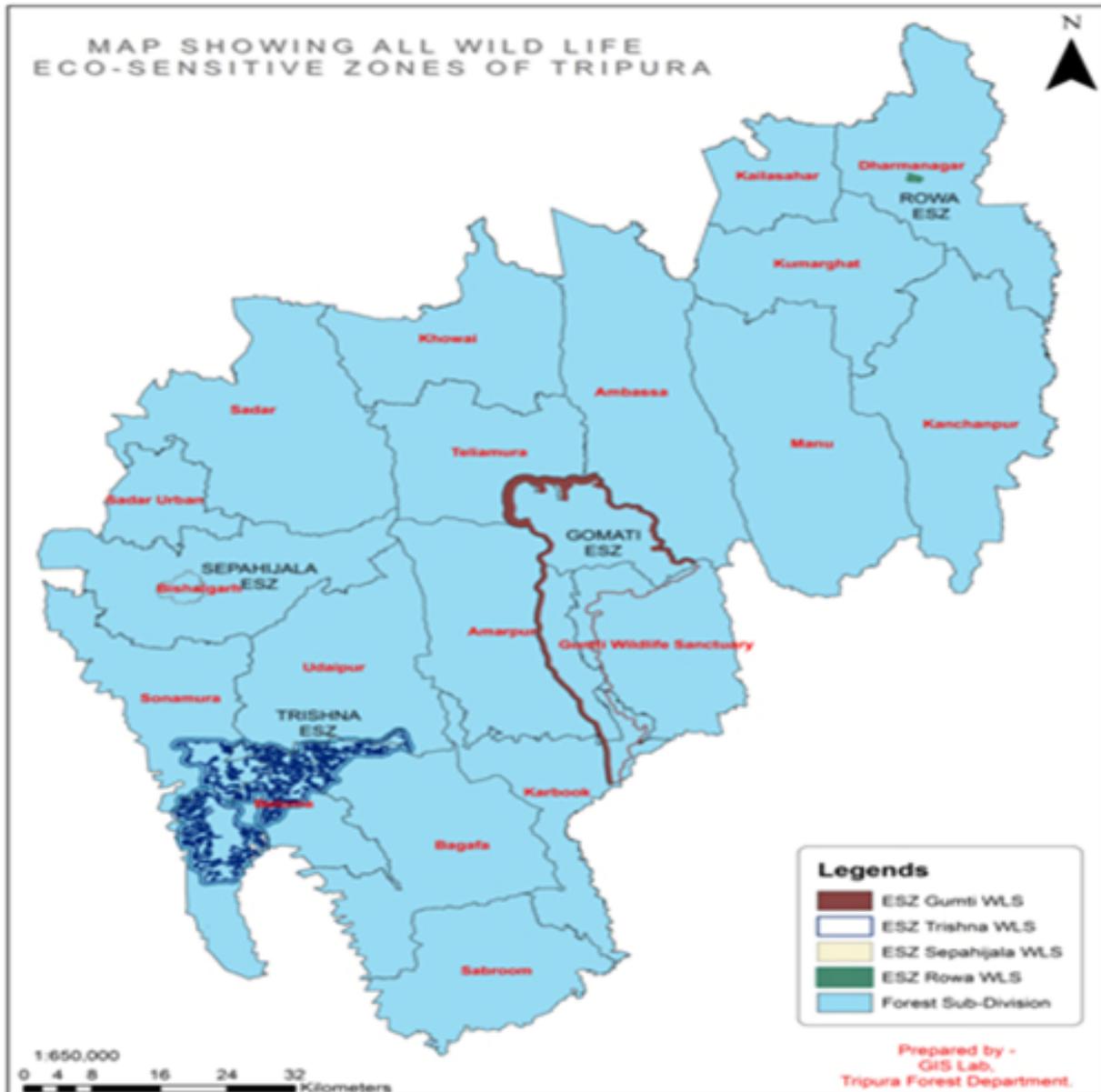
1. Dampa Tiger Reserve : Mizoram
2. Gumti Wildlife Sanctuary : Sikkim
3. Saramati Peak : Nagaland
4. Betla National Park : Karnataka

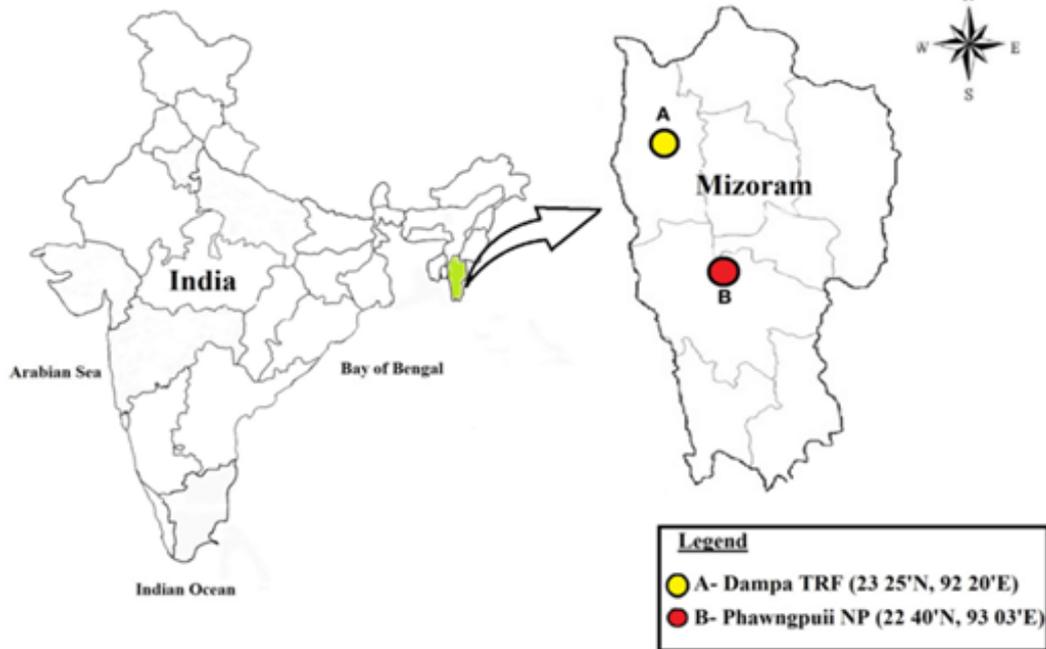
- A. 1 and 2 only
- B. 1 and 3 only
- C. 2 only
- D. All of the above

Answer: B

Explanation

- Dampa Tiger Reserve : Mizoram
- Gumti Wildlife Sanctuary : Tripura
- Saramati Peak : Nagaland
- Betla National Park : Jharkhand





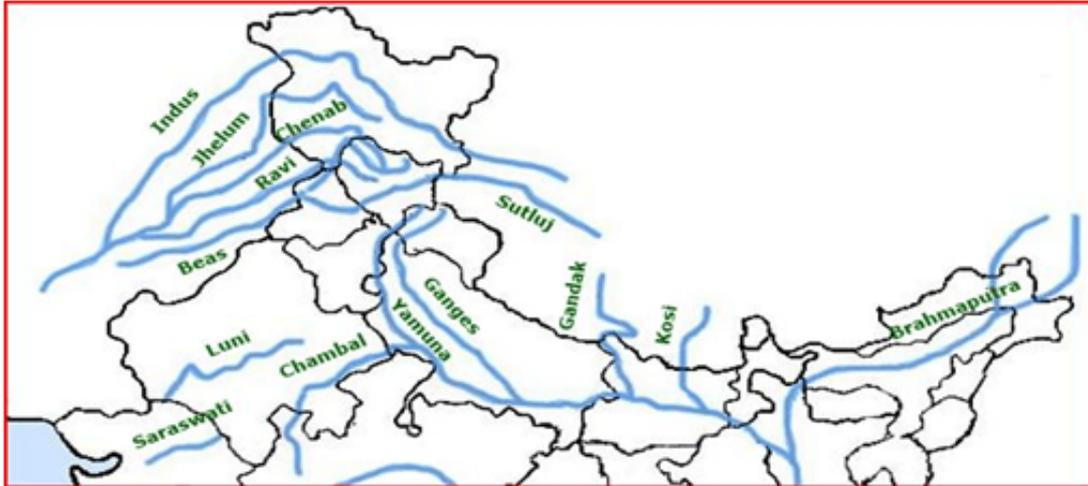
5. Identify the river:

The River has its source in Kullu hills near the Rohtang Pass in Himachal Pradesh. It drains the area between the Pir Panjal and the Dhaola Dhar ranges. After crossing Chamba, it takes a south-westerly turn and cuts a deep gorge in the Dhaola Dhar range.

- A. Satluj
- B. Jhelum
- C. Ravi
- D. Gori Ganga

Answer: C

Explanation



2. History & Culture

Click [here](#) to watch the following questions on YouTube

1. Which of the following statements about Guru Nanak are true?

1. He rejected sacrifices, ritual baths, image worship, austerities and the scriptures of both Hindus and Muslims
2. He organised his followers into a community.
3. He did not wish to establish a new religion
4. He proposed a simple way to connect to the Divine by remembering and repeating the Divine Name, expressing his ideas through hymns

Select the Correct Option

- A. 1, 2 and 3 only
- B. 2, 3 and 4 only
- C. 1, 3 and 4 only
- D. All of the above

Answer: D

Explanation

- The message of Baba Guru Nanak is spelt out in his hymns and teachings. These suggest that he advocated a form of nirguna bhakti. He firmly repudiated the external practices of the religions he saw around him.
- He rejected sacrifices, ritual baths, image worship, austerities and the scriptures of both Hindus and Muslims. For Baba Guru Nanak, the Absolute or “rab” had no gender or form.
- He proposed a simple way to connect to the Divine by remembering and repeating the Divine Name, expressing his ideas through hymns called “shabad” in Punjabi, the language of the region.
- Baba Guru Nanak would sing these compositions in various ragas while his attendant Mardana played the rabab.
- Baba Guru Nanak organised his followers into a community but he did not set up a separate religion which only happened much later under the 10th Guru- Guru Gobind Singh.
- He set up rules for congregational worship (sangat) involving collective recitation.
- It appears that Baba Guru Nanak did not wish to establish a new religion, but after his death his followers consolidated their own practices and distinguished themselves from both Hindus and Muslims.

2. Consider the following statements

1. The amara-nayaka system was a major political innovation of the Delhi Sultanate
2. The amara-nayakas were military commanders who were given territories to govern by the raya.

3. These contingents provided the Vijayanagara kings with an effective fighting force with which they brought the entire southern peninsula under their control.

Which of the above are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. All of the above

Answer: D

Explanation

- The amara-nayaka system was a major political innovation of the Vijayanagara Empire. It is likely that many features of this system were derived from the iqta system of the Delhi Sultanate.
- The amara-nayakas were military commanders who were given territories to govern by the raya.
- They collected taxes and other dues from peasants, crafts persons and traders in the area.
- They retained part of the revenue for personal use and for maintaining a stipulated contingent of horses and elephants.
- These contingents provided the Vijayanagara kings with an effective fighting force with which they brought the entire southern peninsula under their control. Some of the revenue was also used for the maintenance of temples and irrigation works.
- The amara-nayakas sent tribute to the king annually and personally appeared in the royal court with gifts to express their loyalty.
- Kings occasionally asserted their control over them by transferring them from one place to another.
- However, during the course of the seventeenth century, many of these nayakas established independent kingdoms. This hastened the collapse of the central imperial structure.

3. Consider the following statements about Mansabdari system

1. The Mughal administrative system had at its apex a military-cum-bureaucratic apparatus (mansabdari) which was responsible for looking after the civil and military affairs of the state.
2. Some mansabdars were paid in cash (naqdi), while the majority of them were paid through assignments of revenue (jagirs) in different regions of the empire.
3. They were never transferred.

Select the Correct Option

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. All of the above

Answer: A

Explanation

- Akbar, who institutionalized it in Mughal military set up and civil administration after reforming and introduction of two new concepts namely 'Zat' and 'Sawar.'
- The mansab or rank was designated by dual representation - one by personal rank (called zat) and the other by cavalry rank (called sawar). Every mansabdar was given the rank of both zat and sawar.
- There was periodic transfer of mansabdars.
- As institutional framework of mansabdari existed in both military organization and civil administration the mansabdars were transferred from the civil administration to the military department and vice versa.

4. Which of the following is/are correct?

1. **Gandhi was against the English system of education as also against the use of English as a medium of instruction.**
2. **He wanted education to be in the vernacular.**
3. **He advocated free and compulsory education for all-boys and girls between 7 and 14 years.**

Select the Correct Option

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. All of the above

Answer: D

Explanation

- Gandhi was against the English system of education as also against the use of English as a medium of instruction.
- He wanted education to be in the vernacular.
- He advocated free and compulsory education for all-boys and girls between 7 and 14 years.
- In Gandhi's view education should be an integrated approach to the full development of the personality; it should include physical training and high moral principles along with intellectual and cognitive development.
- He differentiated between learning and education, knowledge and wisdom, literacy and lessons of life.

5. What was the purpose of establishing 'Tolstoy Farm' in South Africa by Gandhiji?

1. **Tolstoy Farm was meant to house the families of the Satyagrahies to give them a way to sustain themselves in South Africa**
2. **All those who had lost their jobs and homes by their participation in the Satyagraha could be settled there**

Select the Correct Option

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

Answer: C**Explanation**

- Hermann Kallenbach, a white farmer, was so impressed with the peaceful way of life at Phoenix that he offered, Gandhi his own big farm near Johannesburg to start another establishment.
- He suggested that all those who had lost their jobs and homes by their participation in the Satyagraha during the struggle for equal rights in South Africa could be settled there.
- The new establishment was named 'Tolstoy Farm', after the Great Russian writer whom Gandhi much admired.
- Here people who were different in nationality, religion, and colour lived together like one family.
- They worked hard and shared the fruits of their labour.

3. Polity & governance

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1. The Ravi Naik case in the Supreme Court deals with which of the following issues?

- A. Freedom of Press
- B. Anti- Defection Law
- C. Issue of Prison Reforms
- D. Size of Council of Ministers

Answer: B

Explanation

- In the Ravi S. Naik versus Union of India, the Supreme Court in 1994 clarified that an MP/MLA need not formally resign from their party to attract disqualification under the anti-defection law.
- Interpreting paragraph 2 (1) (a) of the Tenth Schedule, the SC had said: “The expression ‘voluntarily given up his membership’ is not synonymous with ‘resignation’... Even in the absence of a formal resignation from membership an inference can be drawn from the conduct of a member that he has voluntarily given up his membership of the political party to which he belongs.”
- In the recent Rajasthan crisis, Pilot and the MLAs have challenged the same in the high court, asserting that the provision cannot be so widely construed that the very same fundamental freedom of speech and expression of a member of the House is jeopardised.

2. The India Report on Digital Education, 2020 has been launched by which of the following?

- A. Ministry of Human Resource Development
- B. NITI Aayog
- C. ASER Centre
- D. Ministry of Electronics and Information Technology

Answer: A

Explanation

- Union Minister for HRD Shri Ramesh Pokhriyal ‘Nishank’ virtually launched India Report on Digital Education, 2020. Shri Pokhriyal said that the report elaborates on the innovative methods adopted by Ministry of HRD, Education Departments of States and Union Territories for ensuring accessible and inclusive education to children at home and reducing learning gaps.
- The quality digital education has acquired a new urgency in the present context of globalization. Ministry of Human Resource Development has initiated many projects to assist teachers, scholars and students in their pursuit of learning like DIKSHA platform, Swayam Prabha TV Channel, Online MOOC courses, On Air – Shiksha Vani, DAISY by NIOS for differently-abled, e-PathShala, National Repository of Open Educational Resources (NROER) to develop e-content and energized books, telecast through TV channels, E-learning portals, webinars, chat groups, distribution of books and other digital initiatives along with State/ UT Governments.

3. Which of the following are correct about the New Education Policy 2020?

- 1. This is only the second education policy country's history after 1968**
- 2. It provides for a single overarching regulator for the entire higher education**
- 3. It provides for an increase in the number of off-shore campuses of Indian institutions but not setting up of campuses by foreign universities**

- A. 1 only
B. 2 only
C. 1 and 3 only
D. 2 and 3 only

Answer: B

Explanation

- The Union Cabinet approved the new national education policy and with it paved the way for foreign universities to set up campuses in the country.
- The new education policy, which is only the third in the country's history after 1968 and 1986, advocates an increase in the number of off-shore campuses of Indian institutions. It also states the world's top 100 foreign universities will be "facilitated" to operate in India through a new law.
- This, effectively, reverses the BJP's earlier stand on the Foreign Educational Institutions Bill moved by the UPA-II government. At that time, one of the central reservations on foreign universities operating in India was that they would raise the cost of education (high tuition fees, faculty poaching from public universities), rendering it out of reach for a large part of the population.
- Aside from opening up the Indian higher education to foreign players, the new policy marks a significant shift in the format of undergraduate education with the reintroduction of the four-year multidisciplinary bachelor's programme with exit options.
- The new policy has also paved the way for a single overarching regulator for the entire higher education, which will replace the University Grants Commission and the All India Council For Technical Education. The single regulator called the Higher Education Commission of India (HECI) will have "four independent verticals" carrying out the functions of regulation, funding, accreditation and setting standards for learning outcomes.

4. Consider the following statements:

- 1. The Election Commission of India is a five member body.**
- 2. Union Ministry of Home Affairs decides the election schedule for the conduct of both general elections and bye-elections.**
- 3. Election Commission resolves the disputes relating to splits/mergers of recognized political parties.**

Which of the statements given above is/are correct?

- A. 1 and 2 only

- B. 2 only
- C. 2 and 3 only
- D. 3 only

Answer: D

Explanation

- Only statement 3 is correct. Election Commission of India is a 3 member body and it is the election commission which decides the election schedule for both general elections and bye-elections. It is also the function of election commission to resolve the disputes relating to splits/mergers of recognized political parties.

5. In India, Judicial Review implies

- A. The power of the Judiciary to pronounce upon the constitutionality of laws and executive orders.
- B. The power of the Judiciary to question the wisdom of the laws enacted by the Legislatures.
- C. The power of the Judiciary to review all the legislative enactments before they are assented to by the President.
- D. The power of the Judiciary to review its own judgments given earlier in similar or different cases

Answer: A

Explanation

- Judicial review is the power of judiciary to examine the constitutionality of legislative enactments and executive orders of both the Central and state governments.
- On examination, if they are found to be violative of the Constitution (ultra-vires), they can be declared as illegal, unconstitutional and invalid (null and void). Consequently, they cannot be enforced by the government.
- The constitutional validity of a legislative enactment or an executive order can be challenged in a high court or supreme court on the following three grounds:
 - ✓ it infringes the fundamental rights (Part III),
 - ✓ it is outside the competence of the authority which has framed it, and
 - ✓ it is repugnant to the constitutional provisions

4. Economy

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1. Which of the following is/are correct about a Government Security (G-Sec)?

1. In India, while the Central Government can issue both the treasury bills and bonds the State Governments issues can only issues bonds.
2. G-Secs are also called risk-free gilt-edged instruments.

- A. 1 only
B. 2 only
C. Both are correct
D. None is correct

Answer: C

Explanation

- A Government Security (G-Sec) is a tradable instrument issued by the Central Government or the State Governments.
- It acknowledges the Government's debt obligation. Such securities are short term (usually called treasury bills, with original maturities of less than one year) or long term (usually called Government bonds or dated securities with original maturity of one year or more).
- In India, the Central Government issues both, treasury bills and bonds or dated securities while the State Governments issue only bonds or dated securities, which are called the State Development Loans (SDLs).
- G-Secs carry practically no risk of default and, hence, are called risk-free gilt-edged instruments.

2. Which of the following is/are true?

1. Treasury bills or T-bills, which are money market instruments, are short term debt instruments issued by the Government of India and are presently issued in three tenors, namely, 91 day, 182 day and 364 day.
2. Cash Management Bills (CMBs) are issued to meet the temporary mismatches in the cash flow of the Government of India.
3. Public Debt Office (PDO) of the Ministry of Finance acts as the registry / depository of G-Secs and deals with the issue, interest payment and repayment of principal at maturity.

- A. 1 & 2 only
B. 2 & 3 only
C. 1 & 3 only
D. All are correct

Answer: A

Explanation

● Treasury Bills (T-bills)

- ✓ Treasury bills or T-bills, which are money market instruments, are short term debt instruments issued by the Government of India and are presently issued in three tenors, namely, 91 day, 182 day and 364 day.
- ✓ Treasury bills are zero coupon securities and pay no interest.
- ✓ Instead, they are issued at a discount and redeemed at the face value at maturity.
- ✓ For example, a 91 day Treasury bill of ₹100/- (face value) may be issued at say ₹ 98.20, that is, at a discount of say, ₹1.80 and would be redeemed at the face value of ₹100/-.
- ✓ The return to the investors is the difference between the maturity value or the face value (that is ₹100) and the issue price.

● Cash Management Bills (CMBs)

- ✓ In 2010, Government of India, in consultation with RBI introduced a new short-term instrument, known as Cash Management Bills (CMBs), to meet the temporary mismatches in the cash flow of the Government of India.
- ✓ The CMBs have the generic character of T-bills but are issued for maturities less than 91 days.

● Dated G-Secs

- ✓ Dated G-Secs are securities which carry a fixed or floating coupon (interest rate) which is paid on the face value, on half-yearly basis.
- ✓ Generally, the tenor of dated securities ranges from 5 years to 40 years.
- ✓ Most of the dated securities are fixed coupon securities

- The Public Debt Office (PDO) of the Reserve Bank of India acts as the registry / depository of G-Secs and deals with the issue, interest payment and repayment of principal at maturity.

3. Which of the following statements is/are required by law to maintain Statutory Liquidity Ratio (SLR)?

1. Primary (Urban) Co-operative Banks (UCBs).
2. Rural Co-operative Banks.
3. Regional Rural Banks (RRBs)

- A. 1 & 2 only
- B. 2 & 3 only
- C. 1 & 3 only
- D. All are correct

Answer: D

Explanation

● Primary (Urban) Co-operative Banks (UCBs)

- ✓ Section 24 (2A) of the Banking Regulation Act 1949, (as applicable to co-operative societies) provides that every primary (urban) cooperative bank shall maintain liquid assets.
- ✓ Such liquid assets shall be in the form of cash, gold or unencumbered investment in approved securities.
- ✓ This is referred to as the Statutory Liquidity Ratio (SLR) requirement.
- ✓ It may be noted that balances kept with State Co-operative Banks / District Central Co-operative Banks as also term deposits with public sector banks are now not eligible for being reckoned for SLR purpose w.e.f April 1, 2015.

● Rural Co-operative Banks

- ✓ As per Section 24 of the Banking Regulation Act 1949, the State Co-operative Banks (SCBs) and the District Central Co-operative Banks (DCCBs) are required to maintain assets as part of the SLR requirement in cash, gold or unencumbered investment in approved securities.
- ✓ DCCBs are allowed to meet their SLR requirement by maintaining cash balances with their respective State Co-operative Bank.

● Regional Rural Banks (RRBs)

- ✓ Since April 2002, all the RRBs are required to maintain their entire Statutory Liquidity Ratio (SLR) holdings in Government and other approved securities.

● Provident funds and other entities

- ✓ The non- Government provident funds, superannuation funds and gratuity funds are required by the Central Government, effective from January 24, 2005, to invest 40% of their incremental accretions in Central and State G-Secs, and/or units of gilt funds regulated by the Securities and Exchange Board of India (SEBI) and any other negotiable security fully and unconditionally guaranteed by the Central/State Governments.
- ✓ The exposure of a trust to any individual gilt fund, however, should not exceed five per cent of its total portfolio at any point of time.
- ✓ The investment guidelines for non- Government PFs have been recently revised in terms of which minimum 45% and up to 50% of investments are permitted in a basket of instruments consisting of (a) G-Secs, (b) Other securities (not in excess of 10% of total portfolio) the principal whereof and interest whereon is fully and unconditionally guaranteed by the Central Government or any State Government SDLs and (c) units of mutual funds set up as dedicated funds for investment in G-Secs (not more than 5% of the total portfolio at any point of time and fresh investments made in them shall not exceed 5% of the fresh accretions in the year), effective from April 2015.

4. Which of the following can participate in auctions conducted by RBI for G-Secs?

1. Commercial banks
2. Scheduled UCBs
3. Primary Dealers

- 4. **Provident funds**
- 5. **Insurance companies**
- 6. **Retail Investors**

- A. All except 5 & 6 only
- B. All except 6 only
- C. 1, 2 & 3 only
- D. All are correct

Answer: B

Explanation

- G-Secs are issued through auctions conducted by RBI.
- Auctions are conducted on the electronic platform called the E-Kuber, the Core Banking Solution (CBS) platform of RBI.
- Commercial banks, scheduled UCBs, Primary Dealers, insurance companies and provident funds, who maintain funds account and securities accounts with RBI, are members of this electronic platform.
- All members of E-Kuber can place their bids in the auction through this electronic platform.
- Retail investors are allowed participation on “non-competitive” basis in select auctions of dated Government of India (GoI) securities and Treasury Bills.
- Retail investor, for the purpose of scheme of NCB, is any person, including individuals, firms, companies, corporate bodies, institutions, provident funds, trusts, and any other entity as may be prescribed by RBI.

5. Which of the following statements is/are correct about Open Market Operations (OMOs)?

- 1. **When the RBI feels that there is excess liquidity in the market, it resorts to purchase of securities thereby sucking out the rupee liquidity.**
 - 2. **When the liquidity conditions are tight, RBI sells securities from the market, thereby releasing liquidity into the market.**
- A. 1 only
 - B. 2 only
 - C. Both are correct
 - D. None is correct

Answer: D

Explanation

- Both the statements have been reversed.
- OMOs are the market operations conducted by the RBI by way of sale/ purchase of G-Secs to/ from the market with an objective to adjust the rupee liquidity conditions in the market on a durable basis.

- When the RBI feels that there is excess liquidity in the market, it resorts to sale of securities thereby sucking out the rupee liquidity.
- Similarly, when the liquidity conditions are tight, RBI may buy securities from the market, thereby releasing liquidity into the market.
- Repurchase (buyback) of G-Secs is a process whereby the Government of India and State Governments buy back their existing securities, by redeeming them prematurely, from the holders.
- The objectives of buyback can be:
 - ✓ Reduction of cost (by buying back high coupon securities)
 - ✓ Reduction in the number of outstanding securities
 - ✓ Improving liquidity in the G-Secs market (by buying back illiquid securities)
 - ✓ Infusion of liquidity in the system.
 - ✓ Effective cash management by utilising the surplus cash balances.

5. Environment

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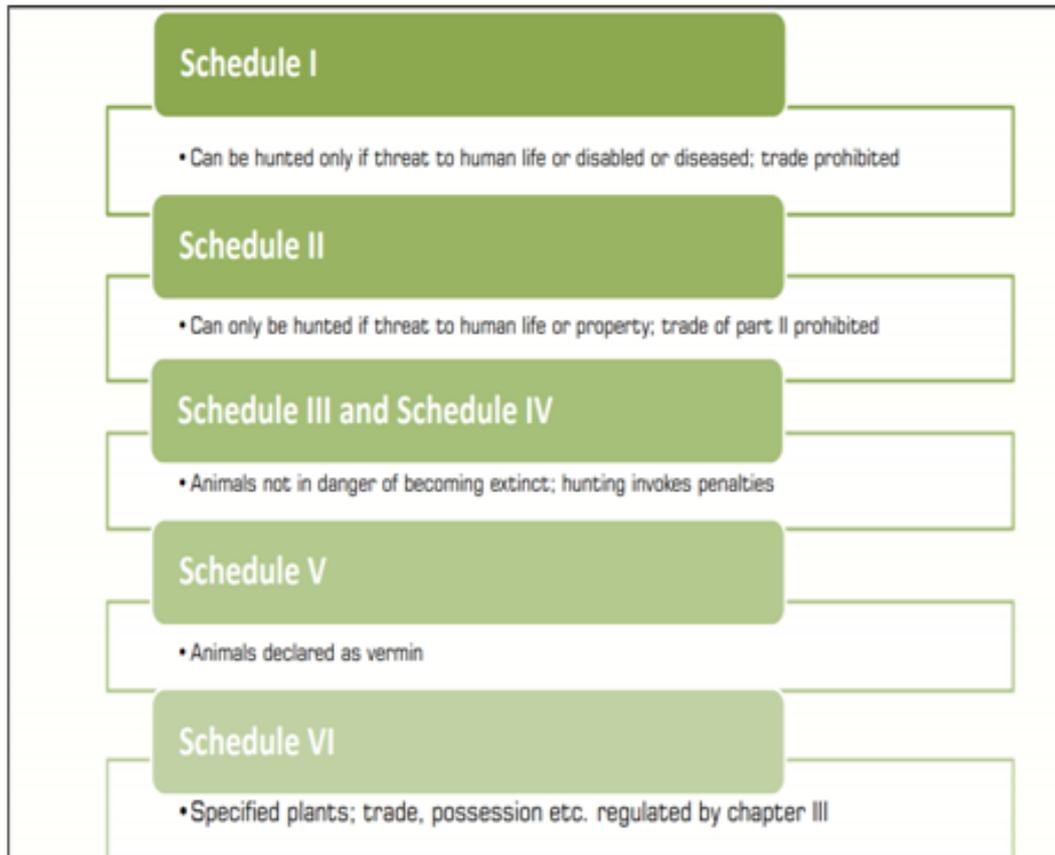
1. In India, if a species of tortoise is declared protected under Schedule I of the Wildlife (Protection) Act, 1972, what does it imply?

- A. It enjoys the same level of protection as the tiger.
- B. It no longer exists in the wild, a few individuals are under captive protection; and now it is impossible to prevent its extinction.
- C. It is endemic to a particular region of India.
- D. Both (b) and (c) stated above are correct in this context.

Answer: A

Explanation

- The Wild Life (The Wildlife Protection Act, 1972 is an Act of the Parliament of India enacted for protection of plants and animal species.
- Before 1972, India only had five designated national parks.
- Among other reforms, the Act established schedules of protected plant and animal species; hunting or harvesting these species was largely outlawed.
- The Act provides for the protection of wild animals, birds and plants; and for matters connected therewith or ancillary or incidental thereto.
- When this Act was passed the wildlife protection subject was in State List and states were empowered to make law on it.
- The Parliament passed this Act using provisions in Article 252 of the Constitution.
- It extends to the whole of India.
- It has six schedules which give varying degrees of protection.
- Schedule I and part II of Schedule II provide absolute protection - offences under these are prescribed the highest penalties.
- Species listed in Schedule III and Schedule IV are also protected, but the penalties are much lower.
- Schedule V includes the animals which may be hunted.
- The specified endemic plants in Schedule VI are prohibited from cultivation and planting.



2. According to the Wildlife (Protection) Act, 1972, which of the following animals cannot be hunted by any person except under some provisions provided by law?

1. Gharial
2. Indian wild ass
3. Wild buffalo

Select the correct answer using the code given below:

- A. 1 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: D

3. From the ecological point of view, which one of the following assumes importance in being a good link between the Eastern Ghats and the Western Ghats?

- A. Sathyamangalam Tiger Reserve
- B. Nallamala Forest
- C. Nagarhole National Park
- D. Seshachalam Biosphere Reserve

Answer: D

Explanation

- It is a significant wildlife corridor in the Nilgiri Biosphere Reserve between the Western Ghats and the rest of the Eastern Ghats



4. Due to some reasons, if there is a huge fall in the population of species of butterflies, what could be its likely consequence/consequences?

1. Pollination of some plants could be adversely affected.
2. There could be a drastic increase in the fungal infections of some cultivated plants.
3. It could lead to a fall in the population of some species of wasps, spiders and birds.

Select the correct answer using the code given below:

- A. 1 only
- B. 2 and 3 only
- C. 1 and 3 only

D. 1, 2 and 3

Answer: C

Explanation



5. In the context of mitigating the impending global warming due to anthropogenic emissions of carbon dioxide, which of the following can be the potential sites for carbon sequestration?

1. Abandoned and uneconomic coal seams
2. Depleted oil and gas reservoirs
3. Subterranean deep saline formations

Select the correct answer using the code given below:

- A. 1 and 2 only
- B. 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: D

Explanation

Carbon Capture and Sequestration

- An option for reducing carbon dioxide in the atmosphere is carbon sequestration.
- Carbon sequestration involves the capture and storage of carbon dioxide that would otherwise be present in the atmosphere, contributing to the greenhouse effect.
- Carbon dioxide can be removed from the atmosphere and retained (stored) within plants and soil supporting the plants. (Natural Sinks)

- Alternatively, carbon dioxide can be captured (either before or after fossil fuel is burned) and then be stored (sequestered) within the earth. (Artificial Sinks)

Types of Sequestration

- There are number of technologies under investigation for sequestering carbon from the atmosphere.
- These can be discussed under three main categories:
- Ocean Sequestration
 - ✓ Carbon stored in oceans through direct injection or fertilization.
- Geologic Sequestration
 - ✓ Natural pore spaces in geologic formations serve as reservoirs for long-term carbon dioxide storage.
- Terrestrial Sequestration
 - ✓ A large amount of carbon is stored in soils and vegetation, which are our natural carbon sinks.
 - ✓ Increasing carbon fixation through photosynthesis, slowing down or reducing decomposition of organic matter, and changing land use practices can enhance carbon uptake in these natural sinks.

6. Science & Technology

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1. Which of the following is/are correct?

1. Compared to CNG, Hydrogen-CNG can reduce emission of Carbon Monoxide
2. CNG emits less CO₂ and NO_x but more particulate matter than petrol or diesel

- A. 1 only
B. 2 only
C. Both 1 and 2
D. Neither 1 nor 2

Answer: A

Explanation

First statement is correct but the second statement is incorrect

- CNG is compressed natural gas. With natural gas mainly composed of methane, CNG emits less air pollutants – carbon dioxide, carbon monoxide, nitrogen oxides and particulate matter – than petrol or diesel.
- H-CNG is a blend of hydrogen and CNG, the ideal hydrogen concentration being 18%. Compared to conventional CNG, use of H-CNG can reduce emission of carbon monoxide up to 70%, besides enabling up to 5% savings in fuel

2. Which of the following are correctly matched?

1. Perseverance : Lander
2. Al Amal: Rover
3. Tianwen-1 : Orbital

- A. 1 only
B. 2 and 3 only
C. 3 only
D. 1 and 2 only

Answer: A

Explanation

- Tianwen-1 by China: Aims to land on the surface of Mars
- Al Amal (Hope) by UAE: Orbital mission to study the Martian atmosphere
- Perseverance Mission by US: Mars landing

3. Which of the following are correct regarding transmission of the disease?

1. Hepatitis A: consumption of contaminated food
2. Hepatitis B: infective blood
3. Hepatitis E: Only in case of Hepatitis B

- A. 1 only
- B. 1 and 2 only
- C. 2 and 3 only
- D. 1, 2 and 3 only

Answer: B

Explanation

Statement 3 is incorrect rest all correct

- Hepatitis A and E: contaminated food or water
- Hepatitis B: Blood, semen, from mothers to infants
- Hepatitis C: infective blood and blood products
- Hepatitis D: only in those infected with Hepatitis B

4. Which of the following causes Plague?

- A. Bacteria
- B. Virus
- C. Protozoa
- D. Fungi

Answer: A

Explanation

- Plague is caused by the bacteria *Yersinia pestis* which is a zoonotic bacteria
- It occurs in three forms
 - ✓ Bubonic
 - ✓ Septicemia
 - ✓ Pneumonic
- Most of the cases are of Bubonic plague

5. Recently, iCREST, an initiative to encourage incubator ecosystem has been launched by

- A. Ministry of Skill Development & Entrepreneurship
- B. NITI Aayog

- C. Ministry of Science & Technology
- D. ISRO

Answer: B

Explanation

- NITI Aayog' Atal Innovation Mission has launched iCREST, Incubator Capabilities Enhancement Program for a robust ecosystem focused on creating high performing Start-ups
- AIM will be joined by Bill and Melinda Gates Foundation and Wadhvani Foundation