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1. Geography

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

1. Arabian Sea is comparatively less prone to cyclonic storms than Bay of Bengal. Which of the following is/are correct reasons for the above statement?

1. Lack of constant fresh water in Bay of Bengal.
2. Cyclones originating in Arabian Sea are believed to move northwest.
3. Arabian Sea is more hotter than Bay of Bengal
4. Pacific is more closer to Bay of Bengal than Arabian Sea.

Select the correct code.

- A. 1, 3 and 4 only
- B. 2 and 4 only
- C. 1 and 2 only
- D. 1 and 4 only

Answer: B

Explanation

- Tropical cyclones are violent storms that originate over oceans in tropical areas and move over to the coastal areas bringing about large scale destruction caused by violent winds, very heavy rainfall and storm surges.
- The climatic conditions necessary for the formation of Tropical Cyclones are:
 - ✓ Water temperature above 27°C for a considerable depth is thus required.

✓ Cyclone formation also depends on Coriolis Force that must be strong enough to initiate the cyclone's rotation.

✓ Pre-existing low-pressure system or a slight weather disturbance.

✓ Upper air circulation should support the thunderstorm formation.

✓ Low vertical wind shear to support the structural of tropical cyclone. High wind shear can break the cyclone structure.

- Why Is The Bay of Bengal So Prone To Cyclones than Arabian sea?

✓ As for the the Arabian Sea, it is much calm as the stronger winds help dissipate the heat and lack of constant fresh water helps the warm water to mix with the cool water underneath, reducing the surface temperature.

♣ The Bay of Bengal is fed by a constant source of freshwater in the form of giant rivers like the Ganga and the Brahmaputra.

- The Arabian Sea enjoys the locational advantage as the winds from the Pacific Ocean encounter the Western Ghats and the Himalayas cutting down on its intensity and sometimes never reaching the Arabian Sea.
- Because of the shape of the land around the Bay of Bengal, the winds are slower and weaker over the ocean, ready to spin.

- The typhoons originating in the Pacific Ocean too influences the cyclones in BOB, not the case in Arabian Sea.

2. New Caledonia was seen recently in news, is present in which of the following regions?

- A. Southern Indian Ocean
- B. Eastern Atlantic Ocean
- C. Southwest Pacific Ocean
- D. Western Indian Ocean

Answer: C

Explanation

- France has granted its Pacific territory of New Caledonia a third referendum on independence after two earlier votes narrowly chose to remain part of France.
- The 1998 “Noumea Accord”, which ended a deadly conflict between the mostly pro-independence indigenous Kanak population and the descendants of European settlers, provided for up to three independence referendums by 2022 if requested by at least a third of the local legislature.



- Located in the southwest Pacific Ocean, to the south of Vanuatu, about 1,210 km east of Australia.

- It is part of Zealandia.
- The Diahot River is the longest river of New Caledonia.

3. Consider the following pairs: GI tags: Associated State

1. Kandhamal Haldi - Telangana
2. Kandangi Sarees - Tamil Nadu
3. Telia Rumal - Odisha
4. Channapatna Toys - Karnataka

Which of the above pairs are correct?

- A. 1, 2 and 3 only
- B. 2 and 4 only
- C. 2, 3 and 4 only
- D. 1 and 3 only

Answer: B

Explanation

- 'Kandhamal Haldi', a variety of turmeric indigenous to southern Odisha, has earned the Geographical indication (GI) tag.
 - ✓ Kandhamal in Odisha's southern hinterland is famed for its turmeric, a spice that enjoys its pride of place in an array of cuisines.
- The Kandangi sarees are manufactured in the entire Karaikudi taluk in Sivaganga district, Tamil Nadu.
 - ✓ They are characterised by large contrast borders and some are known to have borders covering as far as two-thirds of the saree which is usually around 5.10 m-5.60 m in length.

- Telia Rumal is a unique tie and dye technique that uses oil for the treatment of the yarn that helps it retain softness and has a distinct smell of gingelly oil.
- ✓ Puttapaka in Telangana is now on the global map as the centre for a handloom technique known as Puttapaka Telia Rumal.
- ✓ It is no longer handkerchief-size pieces that connoisseurs can buy. The families involved in weaving now create saris, dupattas, dress materials and other made-to-order pieces with the same techniques and exotic patterns.
- Channapatna toys are a particular form of wooden toys (and dolls) that are manufactured in the town of Channapatna in the Ramanagara district of Karnataka.
- ✓ This traditional craft is protected as a geographical indication (GI) under the World Trade Organization, administered by the state govt.

4. Consider the following statements with respect to Space hurricane.

1. The first ever space hurricane was discovered above the South pole.
2. Space hurricanes are caused by radiations unleashed from bursting of a meteor.
3. Space hurricanes can help scientists learn more about how the sun affects Earth's atmosphere.

Which of the above statements is/are incorrect?

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

Answer: A

Explanation

- An international team of scientists may have finally figured it out. These spots could be the northern lights rotating in an unorthodox spiral shape similar to the familiar shape of a hurricane—a phenomenon the team has dubbed a “space hurricane.”
- Space hurricanes are caused by plasma unleashed from the sun as solar wind.
- Hurricanes have also been spotted in the lower atmospheres of our neighbouring planets of Mars, Jupiter and Saturn, while similar phenomena - so-called “solar tornados” - have even been spotted churning the surface of the Sun.



- However, such swirling masses had never before been detected in the upper atmosphere of a planet.

5. Consider the following statements with respect to Dwarf Planet Ceres.

1. Ceres' rapid spin keeps it from attaining a spheroid shape, instead causing it to look more like a slightly flattened football spinning end over end.
2. The scientists have given Ceres the status of an "ocean world" as it has a big reservoir of salty water underneath its frigid surface.
3. It is located in between orbits of Uranus and Neptune.

Which of the above statements is/are incorrect?

- A. 1 and 3 only
- B. 2 only
- C. Both 1 and 2
- D. None of the above

Answer: A

Explanation

- There are five dwarf planets in our Solar System. The most famous is Pluto. The other four, in order of size, are Eris, Make make, Haumea and Ceres.

- Researchers have shed new light on the dwarf planet Ceres, which lies in the asteroid belt between Mars and Jupiter and is also the largest object in that belt.
- Ceres now has the status of an "ocean world", after scientists analyzed data collected by NASA's Dawn spacecraft.
- The Ceres was first spotted by Giuseppe Piazzi in 1801, who assumed that Ceres was the missing planet between Mars and Jupiter.
- It was classified as a dwarf planet in 2006 and is the first dwarf planet to be orbited by a spacecraft. In 2015, NASA's Dawn reached it to study its surface, composition and history.

2. History & Culture

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1. Which of the following is true about the reforms introduced by Alauddin Khalji?

1. He introduced the system of dagh and prepared huliya in his standing army.
2. Khalji was the first Sultan of Delhi who ordered for the measurement of land.
3. He introduced the Persian festival of Nauroz to impress the nobles and people with his wealth and power.

Select the correct answer using the codes given below

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

Answer: B

Explanation

- AlauddinKhalji maintained a large permanent standing army and paid them in cash from the royal treasury.
- According the Ferishta, he recruited 4,75,000 cavalymen. He introduced the system of dagh (branding of horses) and prepared huliya (descriptive list of soldiers). In order to ensure maximum efficiency, a strict review of army from time to time was carried out.
- The introduction of paying salaries in cash to the soldiers led to price regulations popularly called as Market Reforms.
- AlauddinKhalji established four separate markets in Delhi, one for grain; another for cloth, sugar, dried fruits, butter and oil; a third for horses, slaves and cattle; and a fourth for miscellaneous commodities.
- AlauddinKhalji took important steps in the land revenue administration. He was the first Sultan of Delhi who ordered for the measurement of land. Even the big landlords could not escape from paying land tax.
- Land revenue was collected in cash in order to enable the Sultan to pay the soldiers in cash. His land revenue reforms provided a basis for the future reforms of Sher Shah and Akbar.
- It was Balban who introduced rigorous court discipline and new customs such as prostration and kissing the Sultan's feet to prove his superiority over the nobles.
- ✓ He also introduced the Persian festival of Nauroz to impress the nobles and people with his wealth and power. He stood forth as the champion of Turkish nobility.

2. Which of the following are associated with Lord Canning?

1. The Mutiny of 1857
2. Withdrawal of —Doctrine of Lapse
3. Code of Criminal Procedure
4. Allahabad declaration

Select the correct code

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

Answer: D

Explanation

- Lord Canning also served as first Viceroy of India. ! The important events during his tenure include
 - ✓ The Mutiny of 1857, which he was able to suppress successfully.
 - ✓ Passing of Indian Councils Act, 1861 which introduced portfolio system in India.
 - ✓ withdrawal of —Doctrine of Lapse
 - ✓ Introduction of Code of Criminal Procedure ! Enactment of Indian High Courts Act
 - ✓ Indian Penal Code (1858)
 - ✓ Bengal Rent Act (1859)
- To declare the assumption of the Government of India by the crown a Durbar was held at Allahabad on November 1, 1858 by the viceroy Lord Canning.

- Queen`s proclamation was read by Lord Canning. This is known as Allahabad declaration.

3. Biju Patnaik played an active role in India`s freedom struggle and decolonization including being a pilot in the service of this cause. He was conferred the title `bhoomiputra` for which of his acts?

- A. His participation in the 1942 `Quit India` Movement.
- B. His contribution to rescuing British families in Rangoon from Japanese onslaught.
- C. His Contribution for Indonesian freedom struggle against Dutch
- D. Aiding Soviet army against Hitler at Stalingrad.

Answer: C

Explanation

- Interestingly, Nehru entrusted Patnaik with rescuing Indonesian resistance fighters who were fighting their Dutch colonisers in 1948.
- Dodging the Dutch guns, he entered Indonesian airspace and landed on an improvised airstrip near Jakarta.



- Using left-over fuel from abandoned Japanese military dumps, Patnaik took off with prominent rebels, including Sultan Shariyar and Achmad Sukarno, for a secret meeting with Nehru at New Delhi.
 - For his services to the cause of Indonesia's independence, Sukarno, who went on to become president of the archipelago, conferred the title "Bhoomiputra" or son of the soil on Patnaik and gave him an honorary citizenship.
 - He served twice as the Chief Minister of the State of Odisha.
4. Which of the following are correct about the Siddi community of Karnataka?
1. They descended from the Bantu-speaking people of Southeast Africa who were brought to India by French.
 2. They are widely known for their expressive dance form, Siddi Dhamal.
 3. They are recognised as Scheduled Tribe in the state.

Select the correct code.

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

Answer: C

Explanation

- Relevance: Shantharam is India's first legislator from African-origin Siddi community in Karnataka.
- The Siddis of Karnataka, are an ethnic group who descended from the Bantu speaking people of Southeast Africa.
- They were brought to India by Portuguese merchants about 400 years ago.
- Today, about 50,000 Siddi people live all over India, of which, more than a third live in the northern parts of Karnataka. Largely settled in suburbs and forests, Siddis often work as coolies and unskilled labourers on plantations.
- They were recognised as a Scheduled Tribe (ST) in 2004, by the Government of Karnataka. Dance and music are integral to their cultural identity.
- They are widely known for their expressive dance form Siddi Dhamal, which portrays their community life.



5. Which of the following is/are incorrect about Warli Folk Paintings?

1. Mainly women are engaged in the creation of these paintings.
2. These paintings depict mythological characters, images of deities etc.

Select the Correct Option

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. None of the above

Answer: B

Explanation

- Maharashtra is known for its Warli folk paintings. Warli is the name of the largest tribe found on the northern outskirts of Mumbai, in Western India.
- Warli is the vivid expression of daily and social events of the Warli tribe of Maharashtra, used by them to embellish the walls of village houses. !Women are mainly engaged in the creation of these paintings. These paintings do not depict mythological characters or images of deities, but depict social life.

- Images of human beings and animals, along with scenes from daily life are created in a loose rhythmic pattern.



3. Polity & Governance

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1. Consider the following statements with respect to Government of National Capital Territory of Delhi (Amendment) Act, 2021.

1. The elected government will now have to seek the opinion of the Lieutenant Governor for any executive action.
2. The Act prohibits the Legislative Assembly to make Rules to regulate the procedure and conduct of business in the Assembly.
3. The Act requires the LG to reserve certain Bills passed by the Legislative Assembly for the consideration of the President.

Which of the above statements is/are correct?

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

Answer: A

Explanation

- The Government of National Capital Territory of Delhi (Amendment) Bill, 2021 was introduced in Lok Sabha on March 15, 2021.
- The Bill amends the Government of National Capital Territory of Delhi Act, 1991.

- The Act provides a framework for the functioning of the Legislative Assembly and the government of the National Capital Territory (NCT) of Delhi.
- The Bill amends certain powers and responsibilities of the Legislative Assembly and the Lieutenant Governor.
- The Act allows the Legislative Assembly to make Rules to regulate the procedure and conduct of business in the Assembly. The Bill provides that such Rules must be consistent with the Rules of Procedure and Conduct of Business in the Lok Sabha.
- The Act requires the LG to reserve certain Bills passed by the Legislative Assembly for the consideration of the President.
- These Bills are those:
 - ✓ which may diminish the powers of the High Court of Delhi,
 - ✓ which the President may direct to be reserved,
 - ✓ dealing with the salaries and allowances of the Speaker, Deputy Speaker, and members of the Assembly and the Ministers, or
 - ✓ relating to official languages of the Assembly or the NCT of Delhi.

2. Which of the following are correct about Statutory Grants?

1. Article 275 empowers the Parliament to make grants to the every state.
2. Different sums may be fixed for different states.
3. These are charged on Consolidated fund of India.

Which of the above statement(s) is/are correct?

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

Answer: C

Explanation

- Article 275 empowers the Parliament to make grants to the states which are in need of financial assistance and not to every state.
- Also, different sums may be fixed for different states. These sums are charged on the Consolidated Fund of India every year.
- Apart from this general provision, the Constitution also provides for specific grants for promoting the welfare of the scheduled tribes in a state or for raising the level of administration of the scheduled areas in a state including the State of Assam.
- The statutory grants under Article 275 (both general and specific) are given to the states on the recommendation of the Finance Commission.

3. Consider the following statements with respect to RTI Amendment Act, 2019.

1. It provided that the Chief Information Commissioner and an Information Commissioner shall hold office for a term of 5 years.
2. The salary, allowances and other service conditions of the Chief Information Commissioner are similar to those of the Chief Election Commissioner.

Which of the above statements is/are incorrect?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. None of the above

Answer: C

Explanation

- The Right to Information (Amendment) Bill, 2019 amended the Right to Information Act, 2005.
- It provided that the Chief Information Commissioner and an Information Commissioner shall hold office for such term as prescribed by the Central Government. Before this amendment, their term was fixed for 5 years.
- It provided that the salary, allowances and other service conditions of the Chief Information Commissioner and an Information Commissioner shall be such as prescribed by the Central Government.

- Before this amendment, the salary, allowances and other service conditions of the Chief Information Commissioner were similar to those of the Chief Election Commissioner and that of an Information Commissioner were similar to those of an Election Commissioner.

4. Which of the following are incorrect with respect to Special Purpose Agencies in urban areas?

- 1. These are area-based and not functioned-based agencies.**
- 2. These are established as statutory bodies by an act of state legislature or as departments by an executive resolution.**
- 3. These are subordinate agencies of the local municipal bodies.**

Select the correct answer using the codes given below

- A. 1 and 3 only
- B. 2 and 3 only
- C. 1 and 2 only
- D. None of the above

Answer: A

Explanation

- The states have set up certain agencies to undertake designated activities or specific functions that 'legitimately' belong to the domain of municipal corporations or municipalities or other local urban governments.

- In other words, these are function-based and not area-based. They are known as 'single purpose', 'uni-purpose' or 'special purpose' agencies or 'functional local bodies'.
- Some such bodies are:
 - ✓ Town improvement trusts.
 - ✓ Urban development authorities.
 - ✓ Water supply and sewerage boards.
 - ✓ Housing boards.
 - ✓ Pollution control boards.
- These functional local bodies are established as statutory bodies by an act of state legislature or as departments by an executive resolution.
- They function as autonomous bodies and deal with the functions allotted to them independently of the local urban governments, that is, municipal corporations or municipalities and so forth.
- Thus, they are not subordinate agencies of the local municipal bodies.

5. Lt Governor has dismissed 11 Jammu and Kashmir government employees for alleged terror links under provisions of the Constitution. Consider the following statements with respect to the same.

- 1. Article 311 of the Constitution deals with 'Dismissal, removal or reduction in rank of persons employed in civil capacities under the Union or a State'.**
- 2. If a Government servant is suspended, he cannot claim the constitutional guarantee of Article 311.**
- 3. The government employee dismissed under the provisions of Article 311(2) cannot approach either tribunal or the Courts.**

Which of the above statements is/are correct?

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

Answer: D

Explanation

- Article 311 of the Constitution deals with 'Dismissal, removal or reduction in rank of persons employed in civil capacities under the Union or a State'.

- Under Article 311(2), no civil servant can be "dismissed or removed or reduced in rank except after an inquiry in which he has been informed of the charges and given a reasonable opportunity of being heard in respect of those charges".
- Supreme court in case of such Bansh singh Vs State of Punjab clearly held that suspension from service is neither dismissal nor removal nor reduction in rank, therefore, if a Government servant is suspended he cannot claim the constitutional guarantee of Article 311[2].
- In Shyam Lal vs State of U.P[3] Supreme Court held that compulsory retirement differ from dismissal and removal as it involves no penal consequences and also a government servant who is compulsory retired does not loose any part of benefit earned during the service so it doesn't attract the provisions of Article 311.
- The government employee dismissed under these provisions (Art. 311) can approach either tribunal like the state administrative tribunal or the Central Administrative Tribunal (CAT) or the Courts.

4. Economy

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1. Consider the following statements:

1. The first committee headed by Narasimham introduced the concept of an asset reconstruction fund to take over bad debts.
2. The idea of bank mergers and creating strong megabanks was first mooted by the Narasimham Committee.
3. Agricultural Credit Review Committee, which examined the problems of agricultural and rural credit, was headed by M Narasimham.

Which of the above statements is/are correct?

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

Answer: C

Explanation

- The architect of modern Indian banking, former Reserve Bank of India (RBI) governor M. V. Govindarajan Narasimham died recently.
- Narasimham was known for being the chair of two high-powered committees on banking and financial sector reforms.
- For instance, the idea of bank mergers and creating strong megabanks was first mooted by the Narasimham Committee.

- The first Narasimham Committee Report, presented in 1991, recommended the creation of a four-tier banking structure with three large banks on top.
- It also introduced the concept of rural-focused banks such as local area banks.
- The concepts of non-performing assets classification and full disclosure of accounts were also recommended by the first committee.
- The committee introduced the concept of an asset reconstruction fund to take over bad debts.
- Narasimham Committee- II is also known as the Banking Sector Committee. The task of the Committee was to review the progress of the implementation of reforms and to suggest a design for further strengthening of the sector.
- The Committee recommended the merger of major public sector banks to boost international trade.
- It also recommended that government ownership of banks should be reviewed as it hampers the autonomy of banks resulting in mismanagement.

2. Consider the following statements with respect to online money transfer system.

1. The NEFT system is available round the clock throughout the year on all days.
2. In RTGS, the entire amount is transferred in real time.
3. There is no minimum limit for RTGS transactions.
4. Individuals without bank accounts can transfer funds by IMPS.

Which of the above statements is/are correct?

- A. 1, 2 and 3 only
- B. 2 and 4 only
- C. 1 and 3 only
- D. 1, 2 and 4 only

Answer: D

Explanation

- Prepaid payment instruments (PPIs) help facilitate the purchase of goods and services, including financial services, remittances and fund transfers to family and friends against the value stored on such instruments.
- These instruments are generally pre-loaded cards and, in some cases, have a pre-defined purpose of payment.
- Some of the examples of PPIs include Paytm and G-Pay (semi-closed system PPIs), gift cards (closed system PPIs) and debit or credit cards (open system PPIs).

| BASIS OF COMPARISON | NEFT | RTGS | IMPS |
|----------------------------|--------------------|--------------------|---|
| Minimum transfer value | Re. 1 | Rs. 2 lakh | Re. 1 |
| Payment options | Online and offline | Online and offline | Online |
| Maximum transfer value | No limit | No limit | Rs.2 lakh |
| Settlement type | Half hourly basis | Real time | Real time |
| Inward transaction charges | No charges | No charges | Decided by the individual member banks and PPIs |

3. Consider the following statements with respect to Bilateral Netting.

1. It enables two counter parties in a financial contract to offset claims against each other to determine a single net payment.
2. Bilateral netting not is permitted in India.

Which of the above statements is/are correct?

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

Answer: A

Explanation

- A bilateral netting agreement enables two counter parties in a financial contract to offset claims against each other to determine a single net payment obligation due from one counter party to the other.

- Netting refers to offsetting of all claims arising from dealings between two parties, to determine a net amount payable or receivable from one party to the other.
- Similarly, a multilateral netting agreement allows counter parties to offset claims against each other through a Central Counter party (CCP) in a clearinghouse under the Payment and Settlement Systems (Amendment) Act (2015).
- Earlier, Indian financial contract laws did not permit bilateral netting, however, they did allow multi-lateral netting
- In India, Bilateral contracts constitute 40% of total financial contracts, while multilateral contracts constitute 60%.

4. Which one of the following statements about Municipal Bonds is incorrect?

- A. Municipal bonds that are issued to the public are rated by renowned agencies such as CRISIL.
- B. Municipal bonds are low-risk investments.
- C. Municipal bonds are not exempted from taxation.
- D. None of the above.

Answer: C

Explanation

- A municipal bond (muni) is a debt security issued by a state, municipality or county to finance its capital expenditures, including the construction of highways, bridges or schools.
- Through muni bonds, a municipal corporation raises money from individuals or institutions and promises to pay a specified amount of interest and returns the principal amount on a specific maturity date.
- These are mostly exempt from federal taxes and from most state and local taxes, making them especially attractive to people in high income tax brackets.
- Municipal bonds that are issued to the public are rated by renowned agencies such as CRISIL, which allows investors transparency regarding the credibility of the investment option.

5. Consider the following statements with respect to Financial Stability and Development Council (FSDC).

- 1. It is a statutory body.**
- 2. Governor of Reserve Bank of India is the chairperson of this council.**
- 3. Chairman of SEBI, IRDA, PFRDA and IBBI are the members of this council.**

Which of the above statements is/are incorrect?

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

D. 1, 2 and 3

Answer: B

Explanation

- Financial Stability and Development Council (FSDC) will help India be better prepared in dealing with incidents like global economic meltdown.

- It is not a statutory body.

Composition:

- ✓ Governor Reserve Bank of India (RBI)
- ✓ Chairman of SEBI, IRDA, PFRDA and IBBI
- ✓ Chief Economic Advisor, Ministry of Finance
- ✓ Finance Secretary and/or Secretary Department of Economic Affairs (DEA)
- ✓ Secretary, Department of Financial Services (DFS)

✓ Secretary, Ministry of Corporate Affairs

✓ Secretary, Ministry of Electronics and Information Technology

✓ Additional Secretary, Ministry of Finance, DEA, will be the Secretary of the Council

✓ The Chairperson may invite any person whose presence is deemed necessary for any of its meeting(s).

- The Union Finance Minister of India is the chairperson of the council.

5. Environment

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1. Consider the following statements with respect to Graded Response Action Plan (GRAP).

1. It is approved by the Supreme Court in 2016.
2. The plan was prepared by Central Pollution Control Board.
3. If air quality reaches the 'Severe+' stage, the response under GRAP includes extreme measures such as shutting down schools and implementing the odd-even road-space rationing scheme.

Which of the above statements is/are correct?

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

Answer: A

Explanation

- The Graded Response Action Plan (Grap), is a set of curbs triggered in phases as the air quality deteriorates.
- Approved by the Supreme Court in 2016.
- The plan was formulated by the Environment Pollution (Prevention and Control) Authority (EPCA).
- GRAP works only as an emergency measure.

- The plan is incremental in nature – therefore, when the air quality moves from 'Poor' to 'Very Poor', the measures listed under the plan have to be followed.
- If air quality reaches the 'Severe+' stage, the response under GRAP includes extreme measures such as shutting down schools and implementing the odd-even road-space rationing scheme.

2. Which of the following statements is/are correct with respect to Sessa Orchid Sanctuary.

1. It is located in Assam.
2. It is notified under the Environment Protection Act, 1986.
3. Sessa Orchid Sanctuary is the only orchid sanctuary in India.

Select the correct code.

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

Answer: C

Explanation

- Sessa Orchid Sanctuary is located on the West Kameng District of Arunachal Pradesh.
- It is notified in November 1989 under the Wildlife (Protection) Act, 1972.

- The Sessa Orchid Sanctuary is a natural home to more than 236 species of orchids.
- This sanctuary houses many species of Orchids that are rare, endangered, and ornamental.
- It is inhabited by three tribes of Arunachal Pradesh like Akas, Mijis and Sherdukpan.
- It is the only one of its kind in the country, where these flowering plants grow wild.

3. With reference to 'Eco-Sensitive Zones' which of the following statements is/are correct?

- 1. Eco-Sensitive Zones are areas within 10 km around Protected Areas, National Parks and Wildlife Sanctuaries.**
- 2. These areas that are declared under the Wildlife Protection Act, 1972.**
- 3. The purpose of the declaration of such zones is to prohibit all kinds of human activities in those zones except agriculture.**

Select the correct code.

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

Answer: C

Explanation

- Eco-Sensitive Zones or Ecologically Fragile Areas are areas within 10 km around Protected Areas, National Parks and Wildlife Sanctuaries.
- ESZs are notified by MoEFCC, Government of India under Environment Protection Act 1986.
- In case of places with sensitive corridors, connectivity and ecologically important patches, crucial for landscape linkage, even area beyond 10 km width can also be included in the eco-sensitive zone.
- The basic aim is to regulate certain activities around National Parks and Wildlife Sanctuaries so as to minimize the negative impacts of such activities on the fragile ecosystem encompassing the protected areas.

Activities Allowed in ESZs

- Prohibited activities: Commercial mining, saw mills, industries causing pollution (air, water, soil, noise etc.), establishment of major hydroelectric projects (HEP), commercial use of wood, Tourism activities like hot-air balloons over the National Park, discharge of effluents or any solid waste or production of hazardous substances.
- Regulated activities: Felling of trees, establishment of hotels and resorts, commercial use of natural water, erection of electrical cables, drastic change of agriculture system, e.g. adoption of heavy technology, pesticides etc, widening of roads.

- Permitted activities: Ongoing agricultural or horticultural practices, rainwater harvesting, organic farming, use of renewable energy sources, and adoption of green technology for all activities.
4. Which one of the following has released the Global Forest Goals Report 2021?
- A. Intergovernmental Panel on Climate Change.
 - B. United Nations Development Programme
 - C. Department of Economic and Social Affairs of the United Nations
 - D. Global Environment Facility

Answer: C

Explanation

- The Report has been prepared by the Department of Economic and Social Affairs of the United Nations.
- It provides an initial overview of progress towards achieving the six Global Forest Goals and their 26 associated targets as contained within the United Nations Strategic Plan for Forests 2030.
- The United Nations Strategic Plan for Forests 2017-2030 was created with a mission to promote sustainable forest management and enhance the contribution of forests and trees to the 2030 Agenda for Sustainable Development.
- The first Global Forest Goal in the Plan provides for increasing forest area by three per cent by 2030.

5. Consider the following statements:

1. High atmospheric temperatures and high humidity are favourable conditions for a forest fire.
2. The Forest Fire Prevention and Management Scheme (FPM) is the only centrally funded program specifically dedicated to assist the states in dealing with forest fires.
3. To receive fire alerts for a region, citizen have to register on FAST 3.0 portal which is launched by Ministry of Earth Sciences.

Which of the above statements is/are incorrect?

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

Answer: A

Explanation

- Many forest fires start from natural causes such as lightning which set trees on fire.
- However, rain extinguishes such fires without causing much damage.
- High atmospheric temperatures and dryness (low humidity) offer favorable circumstance for a fire to start.
- The Forest Fire Prevention and Management Scheme (FPM): The FPM is the only centrally funded program specifically dedicated to assist the states in dealing with forest fires.



- The FPM replaced the Intensification of Forest Management Scheme (IFMS) in December 2017.
- FAST 3.0 portal is launched by Forest Survey of India (FSI), a premier national organization under the union Ministry of Environment and Forests.
- Citizens can register on this portal to receive SMS updates on any forest fires in their region.

6. Science & Technology

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

1. Consider the following statements with respect to 2-DG oral drug.

1. 2-DG has been developed by the Defence Institute of Physiology and Allied Sciences.
2. The drug accumulates in virus-infected cells, and prevents the growth of the virus by stopping viral synthesis and energy production.
3. It is a drug for Zika Virus.

Which of the above statements is/are correct?

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

Answer: B

Explanation

- 2-DG has been developed by the Institute of Nuclear Medicine and Allied Sciences (INMAS), New Delhi, a lab of the Defence Research and Development Organisation (DRDO), in collaboration with Hyderabad-based pharma company Dr Reddy's Laboratories (DRL).
- According to the government release, clinical trial data show that the molecule helps in faster recovery of patients hospitalised with Covid-19, and reduces their dependence on supplemental oxygen.

- The drug accumulates in virus-infected cells, and prevents the growth of the virus by stopping viral synthesis and energy production.
- Its selective accumulation in virally-infected cells makes this drug unique, the release said.

2. Consider the following statements:

1. Indian Maritime Situational Awareness System (IMSAS) is indigenously developed by ISRO.
2. BOSS is an all-weather electronic surveillance system successfully designed and developed by Instruments Research & Development Establishment (IRDE).

Which of the above statements is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. None of the above

Answer: B

Explanation

- Centre for Artificial Intelligence & Robotics (CAIR), Bengaluru, and Indian Navy has jointly conceptualised and developed the IMSAS.

- It is a state-of-the-art and high performance intelligent software system that provides Global Maritime Situational Picture, marine planning tools, and analytical capabilities to the Indian Navy.
- It provides Maritime Operational Picture from naval headquarters to each individual ship in the sea to enable naval command and control.
- BOSS is an all-weather electronic surveillance system successfully designed and developed by Instruments Research & Development Establishment (IRDE), Dehradun.
- The system has been deployed at Ladakh border area for day and night surveillance.
- The system facilitates monitoring and surveillance by automatically detecting the intrusions in harsh high-altitude sub-zero temperature areas with remote operation capability.

3. Which of the following statements are correct regarding BIOTECH KISAN Scheme?

- 1. The scheme is launched by the Ministry of Agriculture and Farmers Welfare.**
- 2. Its objective is to promote the use of genetically modified seeds.**
- 3. Another objective is to provide financial incentives to farmers.**

Select the correct code

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

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

Answer: B

Explanation

- The scheme is launched by the Department of Biotechnology, Ministry of Science and Technology.
- Biotech KISAN, program is proposed with a mission approach with the establishment of hub and sub-hubs to fulfil- the technology need of the area and generate agriculture and bio-resource related avenues for the local community for the better livelihood and jobs.
- The objectives of the project are:
 - ✓ The establishment of a sustainable model of improved farming to serve farmers for mountain region through establishment of Kisan Hub (one central hub and three sub hub).
 - ✓ promote mainly Local resources for inclusive farming for creating sustainability and to ensure its long-term delivery.
 - ✓ To develop linkages with R&D and regional institutes with different disciplines in Agriculture, Forest and Soil- Water related activities.
 - ✓ To promote and initiate interface between farmers and scientists.
 - ✓ To provide fellowship to men and women farmers.
 - ✓ To develop market linkages and Promotion of Bio-kiosk and Bio-fair for farmers produce.

4. Consider the following statements with respect to Zeolite.

1. Zeolites are microporous, three dimensional crystalline solid of copper silicate.
2. They are soluble in water.
3. Zeolites are used to adsorb atmospheric nitrogen which is then vented out and this leaves oxygen gas remaining to be used for patients.

Which of the above statements are incorrect?

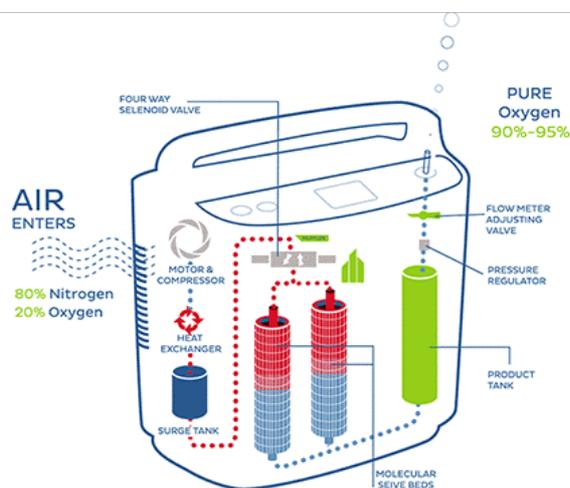
- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: A

Explanation

- To meet the demand of oxygen supply in the country amidst the COVID-19 pandemic, India's Defence Research and Development Organisation (DRDO) has chartered the National Carrier Air India (AI) to import 'Zeolite' from different countries.
- Oxygen concentrators operate using pressure swing adsorption (PSA) technology, in which air is taken in, nitrogen is removed and oxygen enriched gas is released for use by people requiring medical oxygen due to low levels in their blood.
- An oxygen concentrator uses molecular sieves composed by zeolites to adsorb the atmospheric nitrogen and then venting the nitrogen.

- At high pressure, the porous zeolite adsorbs large quantities of nitrogen, due to its large surface area and chemical character.



5. Consider the following statement with respect to Radio Frequency Identification (RFID).

1. It is a type of passive wireless technology that allows for tracking or matching an item or individual.
2. RFID readers are cheaper than barcode scanners.
3. RFID tags do not require line of sight scanning.

Which of the above statements is/are correct?

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

Answer: C

Explanation

- Radio Frequency Identification (RFID) is a technology that uses radio waves to passively identify a tagged object.
- It is used in several commercial and industrial applications, from tracking items along a supply chain to keeping track of items checked out of a library.
- Radio Frequency Identification (RFID) is a type of passive wireless technology that allows for tracking or matching an item or individual.
- The system has two basic parts: tags and readers.
- The reader gives off radio waves and gets signals back from the RFID tag, while the tag uses radio waves to communicate its identity and other information.

| | RFID | Barcode |
|-----------------------|---|--|
| Line of Site | Not required (in most cases) | Required |
| Read Range | Passive UHF RFID: - Up to 40 feet (fixed readers) - Up to 20 feet (handheld readers) Active RFID: - Up to 100's of feet or more | Several inches up to several feet |
| Read Rate | 10's, 100's or 1000's simultaneously | Only one at a time |
| Identification | Can uniquely identify each item/asset tagged. | Most barcodes only identify the type of item (UPC Code) but not uniquely. |
| Read/Write | Many RFID tags are Read/Write | Read only |
| Technology | RF (Radio Frequency) | Optical (Laser) |
| Interference | Like the TSA (Transportation Security Administration), some RFID frequencies don't like Metal and Liquids. They can interfere with some RF Frequencies. | Obstructed barcodes cannot be read (dirt covering barcode, torn barcode, etc.) |
| Automation | Most "fixed" readers don't require human involvement to collect data (automated) | Most barcode scanners require a human to operate (labor intensive) |