CUET UG 2024 Environmental Studies Question Paper (SET A) with Solutions

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Q.1. The disease "Itai-Itai" is caused by contamination of drinking water with which of the following?

- **(1) Mercury**
- **(2) Cadmium**
- **(3) Arsenic**
- **(4) Chromium**

Answer: (2) Cadmium

Solution. Itai-Itai disease is a painful disease related to cadmium poisoning. Primarily, it is caused by water supplies contaminated with cadmium. Consequences of cadmium exposure include osteomalacia and proximal tubule kidney failure. This disease was first reported in Japan when industrial cadmium contamination polluted water.

Q.2. Which of the following are essentially required for photochemical smog formation in the ambient atmosphere?

- **(1) Smoke, water vapour, and low temperature (< 25°C)**
- **(2) NOx, SO2, and high temperature (> 25°C)**
- **(3) NOx, VOCs, and high temperature (> 25°C)**
- **(4) Smoke, NOx, and low temperature (< 25°C)**

Answer: (3) NOx, VOCs, and high temperature (> 25°C)

Solution. Photochemical smog: This process forms through a reaction of nitrogen oxides (NOx) with volatile organic compounds (VOCs) in sunlight, especially at high temperatures. During this process, ozone is generated at ground levels, which is an important component of smog. High temperatures accelerate the chemical reactions that result in smog.

Q.3. Arrange the following stages of primary succession of plants from last stage to first stage:

(A) Reed-swamp stage
(B) Submerged plant stage
(C) Marsh Meadow stage
(D) Phytoplankton

- **(1) (A), (B), (C), (D)**
- **(2) (C), (A), (B), (D)**
- **(3) (D), (B), (A), (C)**
- **(4) (A), (C), (B), (D)**

Answer: (3) (D), (B), (A), (C)

Solution. Aquatic ecosystems show the primary emergence of phytoplankton followed by submerged plants. The reed-swamp plants develop as water levels decline; marsh meadows establish later. Consequently, the correct order from last to first is this: phytoplankton, then submerged plants, then reed-swamp plants, and lastly marsh meadows.

Q.4. Which of the following factors can affect the soil respiration process?

(A) Temperature
(B) Soil moisture
(C) Aeration
(D) Number of soil microbes
(E) Quality of organic matter in the soil

- **(1) (A), (C), and (E) only**
- **(2) (A), (B), (C), and (D) only**
- **(3) (B), (C), and (D) only**
- **(4) (A), (B), (C), (D), and (E)**

Answer: (4) (A), (B), (C), (D), and (E)

Solution. The factors controlling the rate of respiration in the soil are related to: temperature will have a response upon microbial activity; moisture will affect the respiration rate; and aeration can impact the oxygen supply. The count of microbes and the type or quality of organic matter also determine the relative efficiencies of respiration, so all the factors listed in (A), (B), (C), (D), and (E) are involved.

Q.5. Which of the following is not a criteria air pollutant under the National Ambient Air Quality Standards (NAAQS)?

- **(1) CO_2**
- **(2) CO**
- **(3) O_3**
- **(4) Pb**

Answer: (1) CO_2

Solution. Carbon dioxide is a type of greenhouse gas, and hence, not one of the criteria pollutants covered by regulations on NAAQS. Criteria pollutants include substances that directly affect human health: carbon monoxide, ozone, and lead. All regulation mechanisms on climate change apply to CO_2.

Q.6. Match List-I with List-II:

List-I (Forest Act/Policy)
(A) Forest Act
(B) National Forest Policy
(C) Forest Conservation Act
(D) Wildlife Protection Act

List-II (Year)
(I) 1927
(II) 1988

(III) 1980
(IV) 1972

- **(1) (A) - (I), (B) - (II), (C) - (III), (D) - (IV)**
- **(2) (A) - (II), (B) - (III), (C) - (I), (D) - (IV)**
- **(3) (A) - (IV), (B) - (II), (C) - (III), (D) - (I)**
- **(4) (A) - (III), (B) - (I), (C) - (II), (D) - (IV)**

Answer: (1) (A) - (I), (B) - (II), (C) - (III), (D) - (IV)

Solution. If the years associated with key environmental legislation were remembered, the Forest Act was established in 1927, the National Forest Policy in 1988, the Forest Conservation Act in 1980, and the Wildlife Protection Act in 1972. Matching these years with their respective acts gives the right answer.

Q.7. Arrange the following from lowest to highest dry weight in a biomass pyramid of a grassland ecosystem:

(A) Primary Producer
(B) Primary Consumer
(C) Secondary Consumer
(D) Tertiary Consumer

- **(1) (A), (B), (C), (D)**
- **(2) (A), (C), (B), (D)**
- **(3) (D), (C), (B), (A)**
- **(4) (D), (C), (A), (B)**

Answer: (1) (A), (B), (C), (D)

Solution. In a biomass pyramid, primary producers (grasses) have the most biomass, followed by primary consumers (herbivores), secondary consumers (small carnivores), and tertiary consumers.

Q.8. "Curitiba," a city in Brazil, is famously known for its _____.

- **(1) organic farming practices**
- **(2) water network projects implementation**
- **(3) integrated transport network system**
- **(4) solid waste disposal system**

Answer: (3) integrated transport network system

Solution. Curitiba is known for its innovative and efficient bus rapid transit (BRT) system. The city's integrated transportation network is regarded as an example of urban transportation efficiency, with reduced traffic congestion and environmental pollution.

Q.9. Which of the following gasses give the lowest percentage contribution to total global warming?

- **(1) N_2O**
- **(2) NO_2**
- **(3) CFCs**
- **(4) CH_4**

Answer: (2) NO_2

Solution. Nitrogen dioxide (NO_2) contributes less to global warming than other greenhouse gases, such as methane (CH_4), nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). NO_2 is primarily an air contaminant, not a greenhouse gas.

Q.10. Nomadic movements are not considered as migrations because people move from one place to another _____.

- **(1) for economic reasons**
- **(2) for social factors**
- **(3) without any intention**
- **(4) for physical reasons**

Answer: (3) without any intention

Solution. Nomadic movements are cyclical and do not have a permanent aim to settle in a new site, as opposed to migration, which requires a permanent move. As a result, they are classified as movements that have no long-term goal.

Q.11. Which of the following does not explain the relationship between human development and economic development?

- **(1) Capability expansion through economic growth**
- **(2) Capability expansion through poverty reduction**
- **(3) Capability expansion through social services**
- **(4) Capability expansion through environmental degradation**

Answer: (4) Capability expansion through environmental degradation

Solution. Human and economic development emphasize improving living conditions, reducing poverty, and increasing access to social services. Environmental degradation, however, harms both human and economic development, making option (4) incorrect.

Q.12. The Gandhian economy model does not contain elements of _____.

- **(1) multiplication of needs**
- **(2) rejection of class-war**
- **(3) protectionism**
- **(4) nationalism**

Answer: (1) multiplication of needs

Solution. The Gandhian model of the economy, therefore, advocates simplicity, self-sufficiency and minimal material needs. This model argues against multiplication needs and promotes minimalism; therefore, the correct answer is option 1.

13. Which of the following method is most suitable for safe disposal of hospital solid waste?

- **(1) Dumping**
- **(2) Incineration**
- **(3) Pyrolysis**
- **(4) Composting**

Answer: (2) Incineration

Solution. Incineration is the best method for the disposal of hospital waste. This is because incineration is primarily a method of burning and hence destructs pathogens, as well as other harmful materials, very effectively. Hence, the volume of the waste reduces quite significantly, and therefore, incineration is the best option.

Q.14. Arrange the following processes from start to end in a food distribution system:

(A) Packaging of food
(B) Processing of food
(C) Storage of food
(D) Marketing of food

- **(1) (A), (B), (C), (D)**
- **(2) (C), (B), (A), (D)**
- **(3) (A), (B), (D), (C)**
- **(4) (C), (B), (D), (A)**

Answer: (2) (C), (B), (A), (D)

Solution. Food distribution begins with storage, then processing, packaging, and marketing to customers. This flow represents the standard steps in the food supply chain.

Q.15. Which one of the following is an incorrect statement in the context of Gross Domestic Product (GDP)?

- **(1) GDP does not measure the sustainability of growth.**
- **(2) GDP helps to understand whether an economy is growing or contracting.**
- **(3) GDP reflects annual trends of inflation and prices of commodities.**
- **(4) GDP helps to understand shifts in the annual changes in the country's economy.**

Answer: (3) GDP reflects annual trends of inflation and prices of commodities.

Solution. It measures the value of goods and services produced in a country. It does not measure the trend in inflation or commodity prices. The latter is measured by indices such as CPI, so this option is incorrect.

Q.16. Match List-I with List-II:

List-I (Protocol/Convention)
(A) Kyoto Protocol
(B) Montreal Protocol
(C) Bamako Convention
(D) Basel Convention

List-II (Year)
(I) 1987
(II) 1997
(III) 1989
(IV) 1998

- **(1) (A) - (IV), (B) - (I), (C) - (II), (D) - (III)**
- **(2) (A) - (IV), (B) - (I), (C) - (III), (D) - (II)**
- **(3) (A) - (I), (B) - (IV), (C) - (III), (D) - (II)**
- **(4) (A) - (II), (B) - (I), (C) - (III), (D) - (IV)**

Answer: (4) (A) - (II), (B) - (I), (C) - (III), (D) - (IV)

Solution. In 1997, there was the Kyoto Protocol regarding climate change. The Montreal Protocol was signed to curb the ozone layer depletion in 1987. The Bamako Convention of 1989 and the Basel Convention of 1998 relate to hazardous waste disposal and trade. The answer is provided by matching these conventions with their respective years.

Q.17. Petroleum present in sedimentary rocks of a region can only be used when such regions are drilled out and put into use. Such petroleum reserves fall under the category of _____.

- **(1) Actual resources**
- **(2) Potential resources**
- **(3) Stock resources**
- **(4) Reserve resources**

Answer: (2) Potential resources

Solution. Potential resources refer to petroleum reserves that have not yet been exploited but are known to exist. These become genuine resources once they are extracted and used.

Q.18. Which of the following "water storage" types are commonly used in Bihar?

(A) Bhundhis
(B) Ahar
(C) Kulhs
(D) Pynes

- **(1) (A) and (C) only**
- **(2) (B) and (D) only**
- **(3) (A) and (B) only**
- **(4) (C) and (D) only**

Answer: (2) (B) and (D) only

Solution. In Bihar, traditional water storage structures include Ahar and Pynes. These are community-managed systems used for irrigation and water conservation. Bhundhis and Kulhs are used in other parts of India but not typically in Bihar.

Q.19. The diversity of organisms that shares the same community/habitat is called _____.

- **(1) Beta diversity**
- **(2) Gamma diversity**
- **(3) Alpha diversity**
- **(4) Genetic diversity**

Answer: (3) Alpha diversity

Solution. Alpha diversity refers to the diversity of species found in a given environment or ecosystem. It focuses on diversity inside a community, as opposed to beta and gamma diversity, which look at larger scales.

Q.20. Which of the following is not a basic pillar of sustainable development?

- **(1) Environmental preservation**
- **(2) Social equity**
- **(3) Economic growth**
- **(4) Urbanization**

Answer: (4) Urbanization

Solution. Sustainable development is built on three pillars: environmental preservation, social equality, and economic progress. Urbanization is not necessarily a pillar, but it might be a component that must be addressed in various circumstances.

Q.21. Which of the following is a Kharif crop?

- **(1) Wheat**
- **(2) Rice**
- **(3) Cucumber**
- **(4) Mustard**

Answer: (2) Rice

Solution. Rice is a Kharif crop, which is normally grown at the start of the monsoon and harvested in the autumn. Wheat and mustard are Rabi crops, which are planted in the winter.

Q.22. The concept of Joint Forest Management does not include:

- **(1) Government works closer with local people to manage forests.**
- **(2) Locals use forest resources in response to protecting forest ecosystem.**
- **(3) The infrastructure development at the cost of forest resources.**
- **(4) Sustainable conservation of forests.**

Answer: (3) The infrastructure development at the cost of forest resources

Solution. Joint Forest Management (JFM) is a collaborative effort between local people and the government to conserve forests. Developing infrastructure at the expense of trees goes against the fundamental ideals of JFM.

Q.23. The ability of the environment to absorb and render harmless waste and pollution is referred to as:

- **(1) source function of ecosystem**
- **(2) sink function of ecosystem**
- **(3) carrying capacity of ecosystem**
- **(4) optimal capacity of ecosystem**

Answer: (2) sink function of ecosystem

Solution. The sink function of an ecosystem is its ability to absorb, neutralize, or degrade contaminants. This function is essential for preserving environmental balance.

Q.24. Which of the following is the main characteristic of perpetual resources?

- **(1) Consumption at very fast rate**
- **(2) Continuous availability at a limited rate**
- **(3) Unconditional availability**
- **(4) Not formed naturally**

Answer: (2) Continuous availability at a limited rate

Solution. Perpetual resources, such as solar and wind energy, are always available but not unlimited at any given time. Their availability is related to environmental conditions, hence option (2) is valid.

Q.25. Arrange the following radiation in increasing order of their wavelength:

(A) UV-C
(B) UV-B
(C) UV-A
(D) Infra-red
(E) Microwave

- **(1) (C), (B), (A), (D), (E)**
- **(2) (A), (B), (C), (E), (D)**
- **(3) (A), (B), (C), (D), (E)**
- **(4) (E), (D), (C), (B), (A)**

Answer: (3) (A), (B), (C), (D), (E)

Solution. UV-C has the shortest wavelength, while UV-B, UV-A, Infrared, and Microwaves have the longest wavelengths. The correct progression is from UV-C to microwaves.

Q.26. A bee-keeper in an orchard enables pollination and fertilisation of the orchards' shrubs and trees. This is an example of _____.

- **(1) negative production externalities**
- **(2) negative consumption externalities**
- **(3) positive production externalities**
- **(4) positive consumption externalities**

Answer: (3) positive production externalities

Solution. Positive production externalities arise when a third party benefits from production operations. In this scenario, bees not only pollinate but also boost the quantity of orchard fruits, resulting in unintended benefits for the orchard owner.

Q.27. Arrange the atmospheric layers starting from the Earth's surface upwards:

(A) Mesosphere
(B) Stratosphere
(C) Stratopause
(D) Mesopause
(E) Troposphere

- **(1) (E), (C), (B), (D), (A)**
- **(2) (E), (C), (B), (A), (D)**
- **(3) (E), (B), (C), (A), (D)**
- **(4) (E), (B), (C), (D), (A)**

Answer: (3) (E), (B), (C), (A), (D)

Solution. In ascending sequence from the Earth's surface, the atmospheric layers are the troposphere, stratosphere, stratopause, mesosphere, and mesopause. Understanding this sequence allows you to accurately put these layers.

Q.28. Which of the following is associated with Ozone destruction in the Stratosphere?

(A) CFCs
(B) Polar stratospheric clouds
(C) UV-B
(D) UV-A
(E) Cl radicals

- **(1) (A) and (E) only**
- **(2) (A), (B), and (E) only**
- **(3) (A), (C), and (D) only**
- **(4) (A), (B), (C), and (E) only**

Answer: (2) (A), (B), and (E) only

Solution.CFCs, polar stratospheric clouds, and chlorine (Cl) radicals all play important roles in ozone depletion. The interaction of these components degrades ozone molecules, especially in the poles.

Q.29. Which of the following are examples of resources?

(A) Materials
(B) Energy
(C) Knowledge
(D) Services

- **(1) (A) and (D) only**
- **(2) (A), (B), and (D) only**
- **(3) (A), (B), and (C) only**

- **(4) (A), (B), (C), and (D)**

Answer: (4) (A), (B), (C), and (D)

Solution. All of the commodities listed—materials, energy, knowledge, and services—are examples of resources since they may be used to generate value, support economic activity, and propel progress.

Q.30. Which of the following treaty prohibits the import of any hazardous waste (including radioactive waste) into African nations only?

- **(1) The Basel Convention**
- **(2) The Capetown Convention**
- **(3) The Bamako Convention**
- **(4) The Madagascar Convention**

Answer: (3) The Bamako Convention

Solution. The Bamako Convention expressly targets the limitation on hazardous waste imports into Africa, particularly from wealthy countries. It was founded in reaction to the lack of enforcement of the Basel Convention.

Q.31. Continuous increase of productivity of lakes eventually causes:

- **(1) Biomagnification in lakes**
- **(2) Bioaccumulation in lakes**
- **(3) Eutrophication in lakes**
- **(4) Bioconcentration in lakes**

Answer: (3) Eutrophication in lakes

Solution. Eutrophication occurs when surplus nutrients, typically from agricultural runoff, promote algae and plant development in lakes. This causes oxygen deprivation, which harms aquatic life and disrupts ecosystems.

Q.32. Dissolved oxygen in water _____.

- **(1) remains constant in winter and summer**
- **(2) remains low in winter and high in summer**
- **(3) remains high in winter and low in summer**
- **(4) doesn't depend on temperature of water**

Answer: (3) remains high in winter and low in summer

Solution. Dissolved oxygen concentrations are inversely proportional to water temperature. The water can contain more oxygen in the cooler winter months, whereas it loses oxygen when temperatures increase in the summer.

Q.33. Excess suspended particles in lake water due to agricultural runoff result in:

- **(1) high salinity**
- **(2) high turbidity**
- **(3) high dissolved oxygen**
- **(4) high BOD**

Answer: (2) high turbidity

Solution : Suspended particles enhance the turbidity (cloudiness) of water, lowering sunlight penetration and so affecting photosynthesis in aquatic plants. This is the direct outcome of agricultural runoff.

Q.34. Water in lakes having very high algal and phytoplankton growth is expected to have:

- **(1) high dissolved oxygen**
- **(2) high dissolved oxygen and high BOD**
- **(3) low dissolved oxygen and high BOD**
- **(4) low dissolved oxygen and low BOD**

Answer: (3) low dissolved oxygen and high BOD

Solution. When algae and phytoplankton grow too much, they eventually die and decompose. The breakdown process consumes oxygen, causing

low dissolved oxygen levels and increasing biological oxygen demand (BOD).

Q.35. Which of the following is a limiting nutrient in lakes and ponds?

- **(1) Iron**
- **(2) Phosphorus**
- **(3) Magnesium**
- **(4) Sulphur**

Answer: (2) Phosphorus

Solution. Phosphorus is frequently the limiting nutrient in aquatic habitats, which means that its availability determines the rate of growth for plants and algae. Excess phosphorus can cause eutrophication.

Q.36. The available biomass for consumption to herbivores and decomposers is often referred to as:

- **(1) Primary production**
- **(2) Gross primary productivity**
- **(3) Net primary productivity**
- **(4) Secondary productivity**

Answer: (3) Net primary productivity

Solution. Net primary productivity (NPP) is the amount of energy available to herbivores and decomposers after plants utilize some of it for respiration. The biomass is still available for eating.

Q.37. Rate of production of organic matter during photosynthesis is referred to as:

- **(1) Primary production**
- **(2) Gross primary productivity**
- **(3) Net primary productivity**

- **(4) Standing crop**

Answer: (2) Gross primary productivity

Solution. Gross primary productivity (GPP) refers to the total rate at which plants produce organic matter during photosynthesis, before accounting for energy needed in respiration.

Q.38. Which of the following are correct for the interaction between sea anemone that has stinging tentacles and clown fish?

- **(1) Both species are benefitted**
- **(2) Both are harmed**
- **(3) One is harmed and the other is benefitted**
- **(4) One is benefitted and the other remains unaffected**

Answer: (1) Both species are benefitted

Solution. The clownfish and sea anemone are mutually beneficial. The clownfish is protected from predators by residing within the anemone's stinging tentacles, and the anemone benefits from the nutrients in the clownfish's excrement.

Q.39. The species interaction in which both interacting species are harmed is referred to as:

- **(1) Predation**
- **(2) Parasitism**
- **(3) Competition**
- **(4) Mutualism**

Answer: (3) Competition

Solution. In competition, both species suffer because they vie for the same limited resources. This contact favors neither species, hence it is deemed damaging to both.

Q.40. Mycorrhizal association between fungi and the roots of higher plants is best referred to as:

- **(1) Commensalism**
- **(2) Amensalism**
- **(3) Mutualism**
- **(4) Competition**

Answer: (3) Mutualism

Solution. Mutualism allows both organisms to benefit. Mycorrhizae help plants absorb nutrients more efficiently, whilst fungus benefit from the carbohydrates provided by plants.

Q.41. Match List-I with List-II:

Q.List-I (Author)
(A) Gary Snyder
(B) Wendell Berry
(C) Rachel Carson
(D) Barry Commoner

List-II (Book/Poem)
(I) Mountains and Rivers Without End
(II) The Closing Circle
(III) Silent Spring
(IV) A Place on Earth

- **(1) (A) - (IV), (B) - (I), (C) - (III), (D) - (II)**
- **(2) (A) - (I), (B) - (IV), (C) - (III), (D) - (II)**
- **(3) (A) - (II), (B) - (IV), (C) - (III), (D) - (I)**
- **(4) (A) - (IV), (B) - (II), (C) - (III), (D) - (I)**

Answer: (2) (A) - (I), (B) - (IV), (C) - (III), (D) - (II)

Solution. Gary Snyder is well-known for Mountains and Rivers Without End. Wendell Berry's most famous work is A Place on Earth. Rachel Carson is well-known for her breakthrough environmental book Silent Spring, whereas Barry Commoner is best known for The Closing Circle.

Q.42. Match List-I with List-II:

List-I (Concept)
(A) Ecology
(B) Ecosystem
(C) Human population growth
(D) Hot spots

List-II (Proposed by)
(I) Norman Myers
(II) Ernst Haeckel
(III) Sir Arthur Tansley
(IV) T.R. Malthus

- **(1) (A) - (I), (B) - (IV), (C) - (II), (D) - (III)**
- **(2) (A) - (I), (B) - (II), (C) - (III), (D) - (IV)**
- **(3) (A) - (II), (B) - (III), (C) - (IV), (D) - (I)**
- **(4) (A) - (IV), (B) - (I), (C) - (III), (D) - (II)**

Answer: (3) (A) - (II), (B) - (III), (C) - (IV), (D) - (I)

Solution. Ernst Haeckel created the term ecology, while Sir Arthur Tansley proposed the concept of ecosystems. In his well-known work on population dynamics, Thomas Malthus examined human population expansion, while Norman Myers proposed the concept of biodiversity hot zones.

Q.43. The ecological thought, which believes in saving the forests as trees give oxygen, better rainfall, and air quality and not saving the environment for its true innate values, dominantly belongs to _____.

- **(1) Deep ecology**
- **(2) Social ecology**
- **(3) Eco-feminism**
- **(4) Shallow ecology**

Answer: (4) Shallow ecology

Solution. Shallow ecology focuses on how the environment might benefit humans, such as oxygen production and rainfall. It varies from deep ecology, which recognizes nature's intrinsic value.

Q.44. Which of the following is not a major goal of WWF?

- **(1) To conserve world biological diversity**
- **(2) Sustainable use of renewable natural resources**
- **(3) Reduction of pollution and wasteful consumption**
- **(4) Creating world wide fund for education**

Answer: (4) Creating world wide fund for education

Solution. The World Wide Fund for Nature (WWF) works to protect biodiversity, encourage sustainable resource use, and reduce pollution. Creating a global education fund isn't one of its primary goals.

Q.45. The first Earth Day was celebrated on _____.

- **(1) 20 April, 1970**
- **(2) 22 April, 1970**
- **(3) 05 June, 1970**
- **(4) 20 April, 1972**

Answer: (2) 22 April, 1970

Solution. Earth Day was held on April 22, 1970, to raise awareness of environmental issues and mark the start of the current environmental movement.

Q.46. The plants and animals that cannot maintain a constant internal environment are called:

- **(1) Regulators**
- **(2) Migrators**
- **(3) Conformers**
- **(4) Suspenders**

Answer: (3) Conformers

Solution. Conformers are creatures that are unable to manage their internal circumstances and must rely on external environmental stimuli to sustain their internal environment.

Q.47. The number of individuals of the same species that have come into a habitat from elsewhere during the time period under consideration is referred to as _____.

- **(1) Emigration**
- **(2) Immigration**
- **(3) Natality**
- **(4) Mortality**

Answer: (2) Immigration

Solution. Immigration is the process by which people enter a new habitat and increase the population of that place. Individuals who emigrate, on the other hand, leave their natural habitat.

Q.48. Which of the following statements are correct?

(A) Species that invade a bare area are called pioneer species.
(B) In primary succession on rocks, the pioneers are usually lichens.
(C) In primary succession in water, the pioneers are reed swamps.
(D) In secondary succession, species that invade depend on the condition of soil, water, and environment.

- **(1) (A), (B), and (D) only**
- **(2) (A), (B), and (C) only**
- **(3) (A), (B), (C), and (D)**
- **(4) (B), (C), and (D) only**

Answer: (1) (A), (B), and (D) only

Solution . Pioneer species occupy barren regions. Lichens are frequently the first to form in the primary succession on rocks. In water, phytoplankton,

rather than reed swamps, are the pioneers. Secondary succession is determined by soil, water, and environmental factors.

Q.49. Match List-I with List-II:

List-I (State)
(A) Madhya Pradesh
(B) Arunachal Pradesh
(C) Meghalaya
(D) Tamil Nadu

List-II (National Park)
(I) Namdapha National Park
(II) Guindy National Park
(III) Nokrek National Park
(IV) Kuno National Park

- **(1) (A) - (IV), (B) - (I), (C) - (III), (D) - (II)**
- **(2) (A) - (IV), (B) - (III), (C) - (II), (D) - (I)**
- **(3) (A) - (IV), (B) - (I), (C) - (II), (D) - (III)**
- **(4) (A) - (I), (B) - (IV), (C) - (II), (D) - (III)**

Answer: (1) (A) - (IV), (B) - (I), (C) - (III), (D) - (II)

Solution. Kuno National Park is located in Madhya Pradesh, Namdapha is in Arunachal Pradesh, Nokrek is in Meghalaya, and Guindy National Park is in Tamil Nadu. Matching these parks to their corresponding states yields the proper result.

Q.50. Which of the following soil has high water retention capacity?

- **(1) Sandy soil**
- **(2) Loamy soil**
- **(3) Sandy silt soil**
- **(4) Clayey soil**

Answer: (4) Clayey soil

Solution. Clayey soil contains microscopic, tightly packed particles that retain water for extended periods of time, as opposed to sandy soil, which quickly drains water. This makes clayey soil good for crops that need continuous moisture.