



DELHI PUBLIC SCHOOL NEWTOWN
SESSION 2023-2024
HALF YEARLY EXAMINATION

CLASS:IX

SUBJECT: ENVIRONMENTAL APPLICATIONS
[SET-A]

FULL MARKS: 100

TIME:2 HOURS

Answers to this Paper must be written on the paper provided separately.

You will not be allowed to write during the first 15 minutes.

This time is to be spent in reading the Question Paper.

The time given at the head of this Paper is the time allowed for writing the answers.

Attempt all questions from Section A and any four questions from Section B

The intended marks for questions or parts of questions are given in brackets [].

This question paper consists of six printed pages.

SECTION A (40 Marks)

Attempt all questions from this Section

Question 1

Choose the correct answers to the questions from the given options.

[20]

(Do not copy the questions, write the correct answers only)

- i. Carbon dioxide is primarily called a greenhouse gas because
 - a) traps heat
 - b) traps light
 - c) traps warm currents
 - d) none of the above
- ii. The food chain that includes millipede, springtails, woodlice, dung flies and slugs feeding on dead or decaying plants or animals is
 - a) carnivores
 - b) detritivores
 - c) omnivores
 - d) herbivores
- iii. Most animals that live in deep oceanic waters are
 - a) secondary consumers
 - b) primary consumers
 - c) detritivores
 - d) tertiary consumers
- iv. During ecological succession
 - a) the establishment of a new biotic community is very fast in its primary phase.
 - b) the gradual and predictable change in species composition occurs in a given area.
 - c) the changes lead to a community near equilibrium with the environment and is called a pioneer community.
 - d) the numbers and types of animals remain constant.

- v. The most important functions of botanical garden is
- they provide a beautiful area for recreation
 - one can observe tropical plants there
 - they allow ex-situ conservation
 - they provide the natural habitat for wildlife
- vi. Assertion: Lichens are commonly the pioneer species during primary succession on rocks.
Reason: Lichens are able to secrete acids to dissolve rocks.
Choose the correct option
- Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
 - Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
 - Assertion is true but Reason is false.
 - Both Assertion and Reason are false.
- vii. Global warming can be controlled by
- increasing deforestation, reducing efficiency of energy usage
 - increasing deforestation, slowing down the growth of human population
 - reducing deforestation, increasing the use of fossil fuels
 - reducing deforestation, cutting down use of fossil fuel
- viii. Which type of ecological pyramid would be obtained with the following data?
Secondary consumer: 120g
Primary consumer: 60g
Primary producer: 10g
- Upright pyramid of number
 - Upright pyramid of biomass
 - Pyramid of energy
 - Inverted pyramid of biomass
- ix. ‘Lungs of the planet Earth’ refers to
- Taiga forest
 - Tundra forest
 - Amazon Rain forest
 - Rainforests of North-East India
- x. Choose the odd one out from the following options
- Pond
 - Crop field
 - Lake
 - Forest
- xi. The Red List contains
- Categories of names of wild and domesticated species.
 - Categories of names of commercially viable species.
 - Categories of names of threatened species.
 - Categories of names of species based on their size.
- xii. ‘Himalaya May Apple’, a medicinal plant is only found in higher altitudinal regions. This plant is categorized as
- Exotic
 - Abundant
 - Endemic
 - Endangered

xiii. Study the picture and identify the option which is not matching with the functions of the given Convention



- a) Conservation of biological diversity
- b) Infrastructure development
- c) Sustainable use of its components
- d) Fair and equitable sharing of benefits arising from genetic resources

xiv. Allelopathy refers to

- a) inhibition of growth of one species by another species by the production of toxins
- b) inhibition of sporulation of pathogens by the host
- c) altering the reproductive cycle of one organism by another
- d) inhibition of growth of one species by another by preventing reproduction

xv. An example of ex-situ conservation is

- a) Wildlife Sanctuary
- b) Seed Bank
- c) Sacred Groves
- d) National Park

xvi. The decomposers in an ecosystem

- a) convert inorganic materials to simpler forms
- b) convert organic materials to inorganic forms
- c) convert inorganic materials to organic compounds
- d) do not break down organic compounds

xvii. The martyr lady of Jodhpur who sacrificed her life for the protection of forests is

- a) Mira Devi
- b) Amrita Devi
- c) Rameshwari
- d) Sita Bai

xviii. Urban Sprawl refers to:

- a) The expansion of poorly planned, low-density, auto-dependent development, which spreads out over large amounts of land
- b) The study of the life of the city
- c) The movement of people out of cities to the surrounding areas
- d) A territorial coalescence of two or more cities whose peripheral zones have grown together

xix. The full form of MVP is _____.

- a) Maximum Variable Population
- b) Maximum Variety Population
- c) Minimum Viable Population
- d) Minimum Valuable Population

xx. Succession initiated on large sand deposits is called

- a) Psammosere
- b) Hydrosere
- c) Xerosere
- d) Halosere

Question 2

i. Explain the consequences of eliminating all top carnivore entities.

[2]

ii. Give the full form of CITES. State its significance.

[2]

iii. Study the picture and answer the question that follows



With which ecosystem is the above Convention associated? Mention any two threats faced by the mentioned ecosystem.

[3]

iv. Differentiate between Primary and Secondary succession.

[3]

Question 3

- i. The usage of chemical pesticides is the last option in Integrated Pest Management Programme. How do you justify this strategy?
- ii. Oxides of Sulphur and Nitrogen cause great damage to buildings. Justify.
- iii. Explain the three core functions of ecosystem.
- iv. A specific example of Ecotourism would be visiting Tanzania to see native wildlife. Why is this visit considered as Ecotourism? How does it affect the locals of Tanzania?

[2]

[2]

[3]

[3]

SECTION B (60 MARKS)

(Attempt any four questions from this section)

Question 4

i. What is Ecology? Who coined the term? Why do you think is the study of Ecology important?

[5]

ii. “Ubsu, Belesu and Balasu” is the popular slogan of a particular movement. In relation to the given statement answer the following questions:

[5]

- a) Name the movement.
- b) Where did it start?
- c) State three objectives of the above movement.

- iii. Everyday in the TV we find an advertisement declaring that only 1411 tigers are left in our forests. In the light of this and your knowledge of Project Tiger, mention any three achievements of Project Tiger. State any two limitations it had in reaching its goal. [5]

Question 5

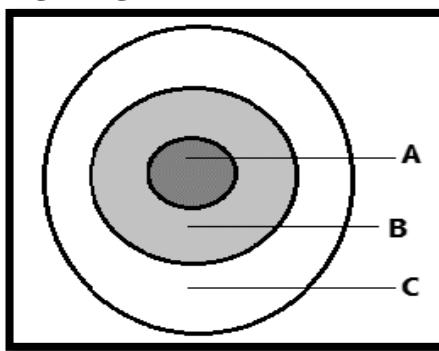
- i. Urbanization has long been associated with human development and progress, but recent studies have shown that urban setting can also lead to significant ecological and economical problems. Comment. [5]
- ii. Sea otter is a keystone species. Give reasons in support of the statement. [5]
- iii. To which category of Red List does Dodo belong? Mention *any four* causes that led to the bird being placed in the mentioned category. [5]

Question 6

- i. The Tehri Dam has been the object of protests by environmental organizations and local people of the region. Environmental activist Sunderlal Bahuguna led the Anti-Tehri Dam movement for years, from 1980s till 2004. Discuss *any five* reasons for which Anti-Tehri Dam movement happened. [5]
- ii. Had you been the Mayor of the city, what steps would you have taken to reduce vehicular pollution? [5]
- iii. Mention any two adaptive features of xerophytes and three adaptive features of desert animals for survival in such an ecosystem. [5]

Question 7

- i. With close to 30 percent of its geographical area already affected, land degradation is definitely among India's most pressing environmental problem. To make matters worse, almost all Indian states have recorded an increase in degraded land in the past 15 years, with the most rapid increase being noted in the biodiversity rich north-eastern states. These details have been published in the Desertification and Land Degradation Atlas of India, made public in August by the Indian Space Research Organisation (ISRO). Explain the reasons behind the degradation. [5]
- ii. Explain the steps involved in forming a climax community. [5]
- iii. Study the simplified diagram given below and answer the questions that follow [5]



- a) What does the diagram indicate?
- b) Name the zones marked as A, B and C and state the importance of each zone.
- c) What sort of conservation strategy does it follow?

Question 8

- i. The objective of the study conducted at the Arignar Anna Zoological Park, Chennai, Tamil Nadu, were to assess the success of captive breeding of chosen mammalian species and to evaluate the potential of the zoo for ex-situ conservation. In this regard mention the pros and cons of captive breeding from the study conducted. [5]
- ii. Mention any five ways by which we can save our forest resources. [5]
- iii. 'Coral reefs form a unique ecosystem.' With respect to the given ecosystem answer the following questions.
 - i. Why are corals called 'the rainforests of the sea'?
 - ii. What are the threats faced by this ecosystem?

Question 9

- i. Explain Pyramid of Number and Pyramid of Biomass with diagrams. [5]
- ii. Introduced species pose a great threat to the Endemic species. In this regard explain the terms 'Introduced Species' and 'Endemic Species' with examples. Give two examples to justify the above statement. [5]
- iii. Carbon is an essential life element and needs to be balanced in nature. Describe the biogeochemical cycle with respect to carbon. What would have happened if the carbon dioxide amount was too less in the atmosphere? [5]