



DELHI PUBLIC SCHOOL NEWTOWN
SESSION 2024-25
HALF YEARLY EXAMINATION

CLASS: IX
SUBJECT: ENVIRONMENTAL APPLICATIONS [SETA]

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 6 printed pages.*

SECTION A (40 Marks)

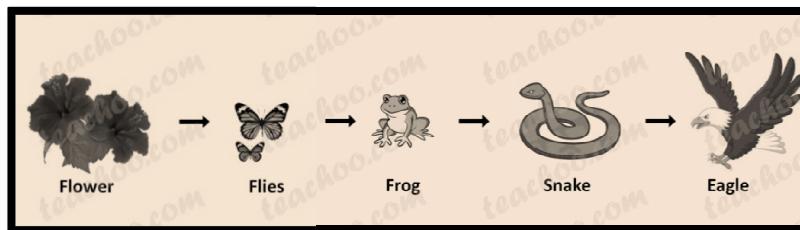
Attempt all questions from this Section

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) Example of an artificial ecosystem is
(a) Forest (b) Grassland (c) Garden (d) Pond
- (ii) The term used to describe the role an organism plays in its habitat is
(a) Biome (b) Niche (c) Community (d) Workload

(iii)



Study the picture and answer the question.

Identify the apex consumer.

- (a) Flies (b) Snake (c) Eagle (d) Flower

- (iv) Identify the incorrect statement:

- (a) Forests provide a variety of products
(b) Forests harbor a rich diversity of flora and fauna
(c) Forests contribute to water conservation
(d) Forests do not contribute to soil conservation

- (v) After years of mining operations in a mountainous area, large areas of land have become barren and susceptible to landslides. State the appropriate statement that indicates the environmental impact

which is most directly associated with the situation.

- (a) Loss of biodiversity
- (b) Increase of greenhouse gas emissions
- (c) Decline in soil fertility
- (d) Risk of soil erosion

(vi) Assertion: Human activities such as deforestation can lead to the loss of ecotypes.

Reason: Destruction of habitats disrupts the ecological niche and adaptive advantages of local populations, potentially causing the extinction of unique ecotypes.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion.
- (b) Both assertion and reason are true and reason is not the correct explanation of assertion.
- (c) Assertion is true and reason is false.
- (d) Assertion is false and reason is true.

(vii) Assertion: Energy pyramids are always upright

Reason: Energy does not traces its path back.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion.
- (b) Both assertion and reason are true and reason is not the correct explanation of assertion.
- (c) Assertion is true and reason is false.
- (d) Assertion is false and reason is true.

(viii) A prolonged draught has affected a grassland ecosystem causing native grass species to become sparse and reducing water availability for wildlife. Why the grassland needs to be revived?

- (a) For grazing of livestock
- (b) For industrialization
- (c) For promoting biodiversity
- (d) For preventing forest fire

(ix) When a species become extinct in the wild, they can be found

- (a) Nowhere
- (b) Only in their natural habitat
- (c) Only in captivity
- (d) As pets

(x) We all live in a community.

Which of the following statement is TRUE about Community?

- (a) It comprises of the biosphere
- (b) It is found only in urban areas
- (c) It includes all the populations of all species of organisms
- (d) It occupies the first level in the organizational chart

(xi) Among the statements given below the Correct ones that describe the concept of wars:

1. Wars have no impact on ecosystem

- 2. Wars result in mutation of genes**
 - 3. Underwater testing of missiles destroy marine ecology**
 - 4. Migrating people as an aftermath of war are called immigrants**

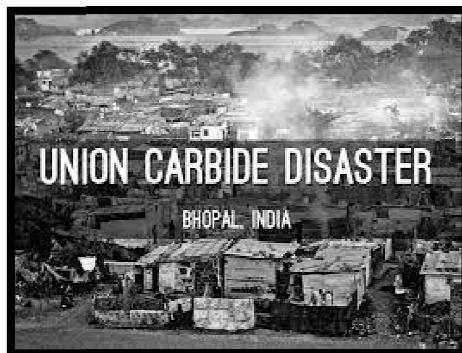
(a) 1 and 4

(b) 2 and 3

(c) 1 and 3

(d) 4 only

(xii) The picture shown below is of a disaster that took place in Bhopal. What kind of accident is it?



- (a) Domestic hazard
 - (b) Industrial disaster
 - (c) Natural disaster
 - (d) Vehicular accident

(xiii) The components of smog is

(xiv) Sea otter is a keystone species. Select the correct sequence of control of the following organisms with reference to the given statement.

1. Kelp
 2. Fish
 3. Sea urchins
 4. Sea otter

(a) 1,3,4,2
(b) 4,3,1,2
(c) 3,4,2,1
(d) 1,4,3,2

(xv) Gene banks preserve genetic materials in controlled condition in the form of:

- (a) Codes
 - (b) Vaccines
 - (c) Eggs and sperms
 - (d) Formulae

(xvi) Wildlife management is an important branch of conservation as
1. It includes habitat management

2. It introduces exotic species where necessary
3. It provides space for agriculture
4. It takes consumer oriented measures

Choose the correct option:

- (a) 1,2,3
- (b) 1,3,4
- (c) 1,2,4
- (d) 3

(xvii) National parks are

- (a) Species centric
- (b) Ecosystem centric
- (c) Biome centric
- (d) Habitat centric

(xviii) Antibiotics are derived from

- (a) Protozoa (b) Bacteria (c) Fungi (d) Both bacteria and fungi

(xix) Select the correct pair.

- | | |
|------------------|-------------|
| (a) Parthenium - | Endemic |
| (b) Nene - | Australia |
| (c) Dodo - | Extinct |
| (d) Shark - | Sea urchins |

(xx) A series of organisms interrelated in their food habits forming a network telling us who eats whom is:

- | | |
|-------------------|--------------------------|
| (a) Food chain | (b) Food web |
| (c) Trophic level | (d) Biogeochemical cycle |

Question 2

- (i) What is a grazing web? [2]
- (ii) State any two functions of the forest ecosystem. [2]
- (iii) The picture given below is of a logo of an agreement. [3]



- (a) What is the full form of the term shown in the picture? [2]
- (b) Enumerate its role. What was the major reason for signing this agreement? [2]
- (iv) State any three reasons for knowing ecology. [3]

Question 3

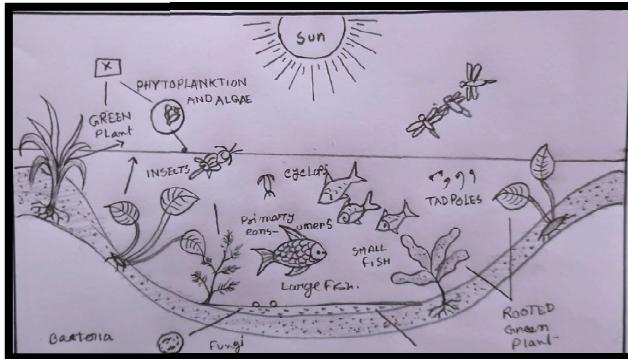
- (i) 'Biodiversity is the way, so don't let nature go astray.' Give any two reasons to support the statement. [2]
- (ii) A heavily populated urban area characterized by substandard housing and squalor generally built by poor migrating people are [2]

- known as slums. Give any two characteristics of slums.
- (iii) What are the effects of increased number of vehicles on health of human beings? [3]
- (iv) Today over 50% people live in urban areas. What are the impacts of urbanization on the environment? [3]

SECTION B (60 MARKS)
(Attempt any four questions from this section)

Question 4

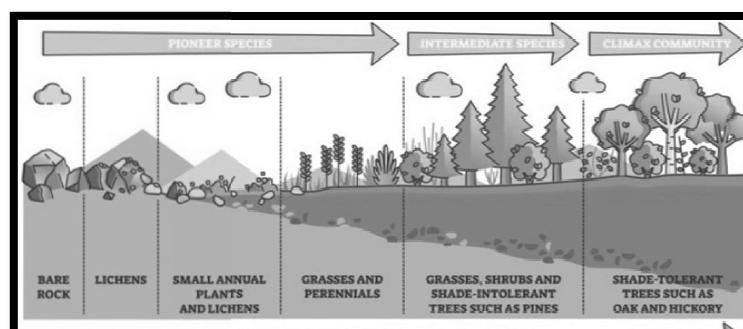
- (i) The picture given below is of a pond ecosystem. [5]



- (a) Identify the different zones of the ecosystem.
(b) What kind of flora and fauna are found here?
(ii) What is a wetland? Mention any three functions of wetlands. [5]
(iii) Corals are known as the 'rainforest of the sea.' What are corals? Why are they called so? What is coral bleaching? [5]

Question 5

- (i) *Leucaena leucocephala* is a multifaceted, fast growing tree which was introduced in India from Hawaii, as a part of social forestry programme due to its many benefits. Mention any of 3 benefits of the plant. Why did the propagation stop? Why it could not be eradicated?
(ii) Desert animals survive in extreme condition of temperature. In this context mention the adaptations of desert animals that help them survive in such conditions.
(iii)



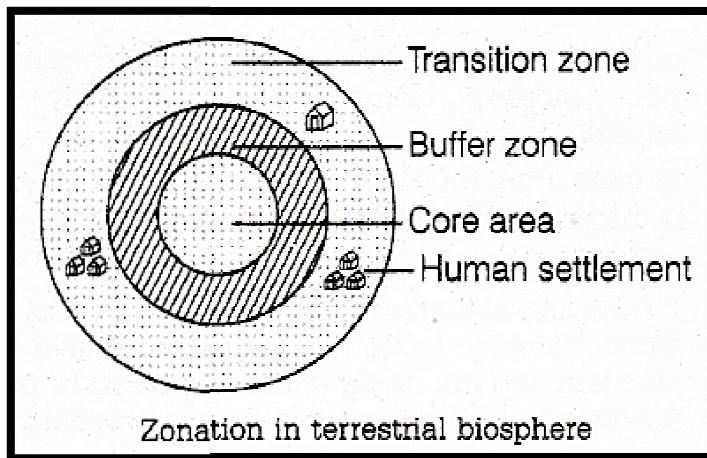
A diagram of an ecological phenomenon is shown above. Name the phenomenon and explain the steps in detail. Identify the first and the last entities to participate in the process.

Question 6

- (i) Enumerate the different causes for extinction of species. [5]
(ii) The zoo not only serves as a place of entertainment but also as a place where ex-situ conservation is carried out. What is captive breeding? Mention its advantages and disadvantages. [5]
(iii) What are the objectives of in situ conservation? [5]

Question 7

- (i) Biosphere reserve is a special category of protected area of land or coastal environment which aims at conservation of ecosystems and genetic resources contained in them. [5]



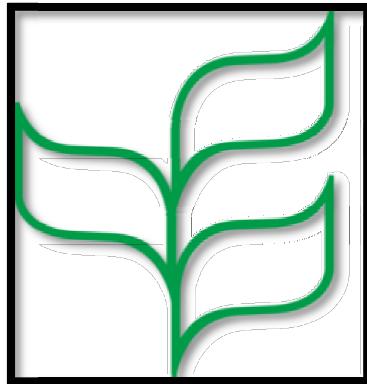
- (a) What does the diagram indicate? Name a biosphere reserve in India.
(b) Mention any three characteristics of biosphere reserve.
- (ii) Mention the features of forest ecosystem especially highlighting the layers of a rainforest. [5]
(iii) Design a food web including the following organisms: Green plant, Goat, Lion, Snake, Jackal, Wild cat, Rabbit, Owl, Kite, Bacteria [5]

Question 8

- (i) The construction of major dams has led to more social and environmental problems rather than to many benefits. Explain. [5]
(ii) 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]
(iii) How is acid rain caused? Mention any three ill effects of acid rain on the environment. [5]

Question 9

- (i) Study the picture and answer the questions that follows: [5]



- a) Give the full form of the above internationally legally binding treaty under United Nations. When was it signed? [5]
 - b) What were its three main goals? [5]
- (ii) State the difference between lentic and lotic ecosystems. Give one examples of each. Mention any 3 threats to these ecosystems. [5]
- (iii) In 1950s, the government declared the Kalase forest as a 'backward area'. What did the Government do to improve the area and what was the outcome? Explain the objectives of the mass movement that led to the conservation of the forest. [5]