



**DELHI PUBLIC SCHOOL NEWTOWN
SESSION 2022-2023
HALF YEARLY EXAMINATION**

CLASS: IX

SUBJECT: ENVIRONMENTAL APPLICATIONS [SET-B]

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 five printed pages.

SECTION A[40 MARKS]

(Attempt **all** questions from this Section)

Question 1

Choose the correct answer and write the correct option

[20]

1. In a food chain the second trophic level is occupied by:
 - A. Carnivores
 - B. Autotrophs
 - C. Herbivores
 - D. Producers
2. If 100 J energy is available at the producer level in a food chain then the energy available to the secondary consumer will be:
 - A. 10J
 - B. 1J
 - C. 0.1J
 - D. 0.01J
3. Which is not responsible for extinction of many species of animals?
 - A. Deforestation
 - B. Poaching
 - C. Afforestation
 - D. Exotic Species
4. Which of the following habitat have most biodiversity?
 - A. Antarctica
 - B. Amazon Rain forest
 - C. Sahara Desert
 - D. North Pole

- 5. The objective of environmental education is**
 - A. Raise consciousness about environmental education**
 - B. To teach environmentally appropriate behavior**
 - C. Create an environmental ethic that fosters awareness about ecological interdependence of economics, social and political**
 - D. All of the above**
- 6. Ocean acidification describes the decrease in ocean pH that is caused by ----- emissions into the atmosphere.**
 - A. anthropogenic carbon dioxide (CO₂)**
 - B. methane**
 - C. nitrous oxide**
 - D. ozone**
- 7. Overgrazing results in:**
 - A. Soil erosion**
 - B. Retention of useful species**
 - C. Productive soils**
 - D. All of the above**
- 8. The first UN Conference on Environment and Development, or Earth Summit, was held in _____ in 1992.**
 - A. New York City**
 - B. San Francisco**
 - C. Rio de Janeiro**
 - D. Geneva**
- 9. The following is the correct grazing food chain**
 - A. Grass--> Grasshopper----> Frog -----> Hawk -----> Snake**
 - B. Grass---> Grasshopper--> Snake---> Frog----> Hawk**
 - C. Hawk---> Snake---> Frog--> Grasshopper---> Grass**
 - D. Grass--> Grasshopper---> Frog---> Snake---> Hawk**
- 10. The order of succession in a xerosere is**
 - A. Foliose lichen. Crustose lichen, moss, herb, shrub, forest**
 - B. Crustose lichen, foliose lichen, moss, herb, shrub, forest**
 - C. Moss, foliose lichen, crustose lichen, herb, shrub, forest**
 - D. Crustose lichen, foliose lichen, moss, shrub, herb forest**
- 11. Which of the following organisms begins marine food chains?**
 - A. Phytoplankton**
 - B. Fishes**
 - C. Zooplankton**
 - D. Corals**
- 12. Van mahotsav was initiated by**
 - A. Gaura Devi**
 - B. K.M.Munshi**
 - C. Indira Gandhi**
 - D. Amrita Devi**
- 13. Name the famous leader of Chipko Movement who died recently.**
 - A. Gaura Devi**
 - B. Sunderlal Bahuguna**

C. Chandi Prasad Bhatt

D. Amrita Devi

14. Ecological niche of an organism represents

- A. The resources it utilizes and the condition it tolerates
- B. Functional role in the ecosystem
- C. Both
- D. None

15. Which trophic level are tertiary consumers?

- A. Second
- B. Third
- C. Fourth
- D. Fifth

16. Which of the following is responsible for turning Taj Mahal yellow?

- A. Nitrogen dioxide
- B. Sulphur dioxide
- C. Sulphur
- D. Nitrogen

17. Which of the following statement (s) is/are correct about Indian forest reserve?

I. Indian mangroves covering about 4500 km² area in the coastal regions and about 5% area of the world. II. Sunderban is the largest mangrove forests in India and it have been added to the list of biosphere reserves of UNESCO.

- A. Only I
- B. Only II
- C. Both I and II
- D. Neither I or II

18. 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

19. What is MVP?

- A. Maximum Viable Population
- B. Minimum Viable Population
- C. Moderate Viable Population
- D. Medium Viable Population

20. On the sand, ecological succession is

- A. Halosere
- B. Psammosere
- C. Xerosere
- D. Hydrosere

Question 2

- i. Top carnivores get less energy if food chains are long. Justify this statement with the help of 10% Law. [2]
- ii. Explain the statement in a sentence or two –“Green house effect and global warming are related phenomenon”. [2]
- iii. What is the significance of otters in an ecosystem? [3]
- iv. State three differences between in-situ and ex-situ conservation. [3]

Question 3

- i. “ Agro ecosystems are human modified ecosystems which are commercially beneficial, but environmentally unfriendly”. Justify the statement. [2]
- ii. Expand CITES. What is its aim? [2]
- iii. Explain Ecotypes with an example. [3]
- iv. “Slums are an eye-sore to any developing city”. Justify this statement giving valid points. [3]

SECTION B[60 MARKS] (Attempt any four questions from this Section)

Question 4

- i. Desert is a unique ecosystem where organisms show unique adaptive features. Mention some adaptive features exhibited. [5]
- ii. What are the problems related to the construction of large multi-purpose dams? [5]
- iii. The recent mass death of fish along the Mumbai coast is attributed to the dumping of toxic waste in the sea. Give reasons for the urgent need to conserve marine resources. [5]

Question 5

- i. Describe the succession of forest on a bare rocky area. [5]
- ii. Captive breeding is an effective way of conserving rare and endangered species. Comment on the above statement. [5]
- iii. The three major ‘P’s which intended the development of local people resulted in a fourth P. Where in India did this happen and why? What was later done to save the region? [5]

Question 6

- i. How have war and mining affected the environment? [5]
- ii. Critically examine the success and failures of 'Project Tiger' in its 49 years of implementation. [5]
- iii. Introduced species poses a great threat to the Endemic species. In this regard explain the terms 'Introduced' and 'Endemic'. Give two examples to justify the above statement. [5]

Question 7

- i. Biosphere Reserves promotes solutions reconciling the conservation of biodiversity with its sustainable use. Justify the given statement. Give an example of Biosphere Reserve in West Bengal. How is Biosphere Reserve different from a Wildlife Sanctuary? [5]
- ii. Discuss Carbon cycle and give its ecological impact. [5]
- iii. What is Acid Rain? What are its effects on the surroundings? [5]

Question 8

- i. Urbanization has long been associated with human development and progress, but recent studies have shown that urban setting can also lead to significant inequalities and health problems. Comment. [5]
- ii. Explain the various ecological benefits of forests. [5]
- iii. Design a food web including the following organisms: Green plant, Goat, Lion, Snake, Jackal, Wild cat, Rabbit, Owl, Kite, Bacteria. [5]

Question 9

- i. Enumerate the effects of extinction of species. [5]
- ii. Describe the pyramid of number with a proper diagram. In what case can it be inverted? [5]
- iii. Study the picture and answer the questions that follow.



Which ecosystem is closely related to the above picture? What economic and ecological benefits does the said ecosystem provide? [5]