



DELHI PUBLIC SCHOOL NEWTOWN
SESSION 2024-25
HALF YEARLY EXAMINATION

CLASS: IX
SUBJECT: ENVIRONMENTAL SCIENCE [SET A]

FULL MARKS: 80
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 answers to the questions from the given options.

[16]

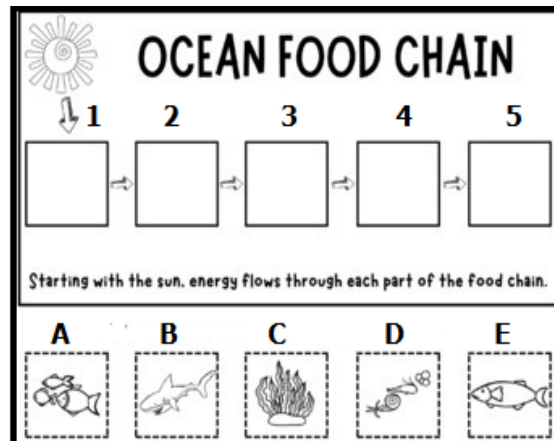
(Do not copy the questions, write the correct answers only)

- (i) Use of naturally occurring microorganisms to digest contaminants : *Bioremediation*
:: Use of plants and trees to remove pollutants : _____.
(a) Bioaccumulation (b) Phytoremediation
(c) Eutrophication (d) Decomposition
- (ii) A suitable strategy to achieve sustainable development by developing countries can be
(a) Ensuring population growth (b) Overconsumption of resources
(c) Using alternative sources of energy (d) Exploitation of biodiversity
- (iii) In which zone decomposition of dead organisms take place?
(a) Limnetic (b) Littoral (c) Benthic (d) Profundal
- (iv) The ozone layer is getting depleted due to use of various Ozone Depleting substances. To control this problem, countries under _____ Protocol, agreed to reduce the use of such substances.
(a) Helsinki (b) Montreal (c) Kyoto (d) Ramsar
- (v) An industrial plant beside river Ganga constantly disposes of heated effluents into the river body. How will it affect the oxygen solubility in the river?
(a) They increase the solubility of oxygen in the water bodies
(b) They maintain the solubility of oxygen in the water bodies
(c) They reduce the solubility of oxygen in the water bodies
(d) They do not cause any effect on solubility of oxygen in the water bodies
- (vi) In the carbon cycle, the human body returns carbon to the atmosphere through the process of

- (a) Formation of glucose
- (c) Cellular respiration

- (b) Waste products
- (d) Photosynthesis

(vii) What should be the right order of organisms in the different trophic levels



- (a) 1- B, 2-C, 3-E, 4-D, 5-A
- (c) 1- C, 2-D, 3-A, 4-E, 5-B

- (b) 1- A, 2-E, 3- B, 4-C, 5-D
- (d) 1-D, 2-A, 3-C, 4-B, 5-E

(viii) Study the food chain given below and answer

Grass→Grasshopper→Frog→Snake→Hawk

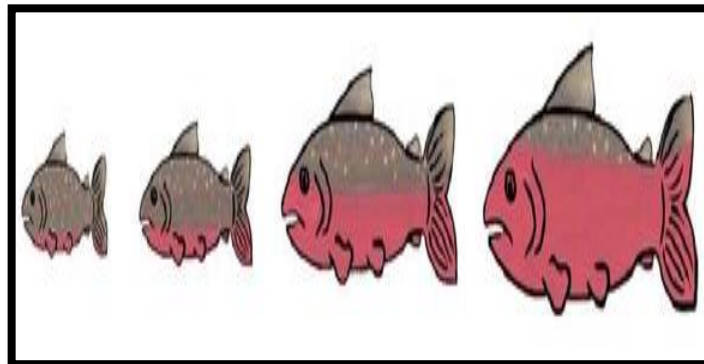
If trophic level 3 has 100 J of energy, how much energy will trophic level 5 have?

- (a) 10,000J
- (b) 1000J
- (c) 10J
- (d) 1J

(ix) The world will shortly be facing the _____ mass extinction due to various anthropogenic causes.

- (a) Third
- (b) Fourth
- (c) Fifth
- (d) Sixth

(x) Study the picture given below and state the phenomenon represented



- (a) Eutrophication
- (c) Thermal pollution

- (b) Biomagnification
- (d) Salination

(xi) Assertion: A sparrow is a primary producer when it eats seeds, fruits and peas.

Reason: Sparrow belongs to primary consumer when it eats insects and worms.

- (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) Both assertion and reason are false

- (xii) The full form of OECD is
 (a) Organization for Economic Corporation and Development
 (b) Organization of Economic Co-operation and Development
 (c) Organization for Economical Co-operation and Development
 (d) Organization of Economic and Cultural Development
- (xiii) Pick out the incorrect pair from the following
 (a) Trans Himalayan Zone—Dugong
 (b) Desert Region--Camel
 (c) Coastal zone—Turtles
 (d) North East zone--Rhino

- (xiv) Match the following columns correctly.

Column I

1. The interaction or cooperation of two or more agents to produce a combined effect greater than the sum of their separate effects.
2. Process used to describe situations where two or more species reciprocally affect each other's evolution.
3. Type of interaction between two species where both benefit from the interaction.
4. Interaction where two organisms belonging to the same or different species compete for the same resource which may be in short supply.

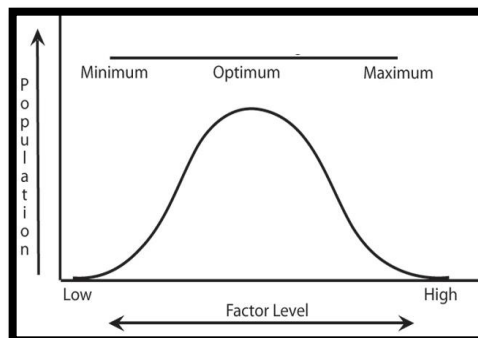
Column II

- A. Co-evolution
- B. Competition
- C. Synergism
- D. Mutualism

- (a) 1- B; 2-D; 3-A; 4-C
 (c) 1- A; 2-B; 3-C; 4-D

- (b) 1-C; 2-A; 3-D; 4-B
 (d) 1-D; 2-C; 3-B; 4-A

- (xv) Study the picture given below and identify the law associated with it.



- (a) Law of Minimum
 (c) Law of Tolerance

- (b) Law of Limiting factor
 (d) Lindeman's Ten Percent Law

- (xvi) "Uniformity is not nature's way; Diversity is nature's way".
 According to the slogan, which of the following is not associated?
 (a) Biodiversity Conservation
 (b) Wildlife exploitation
 (c) Sustainable consumption
 (d) Reduced Poaching

Question 2

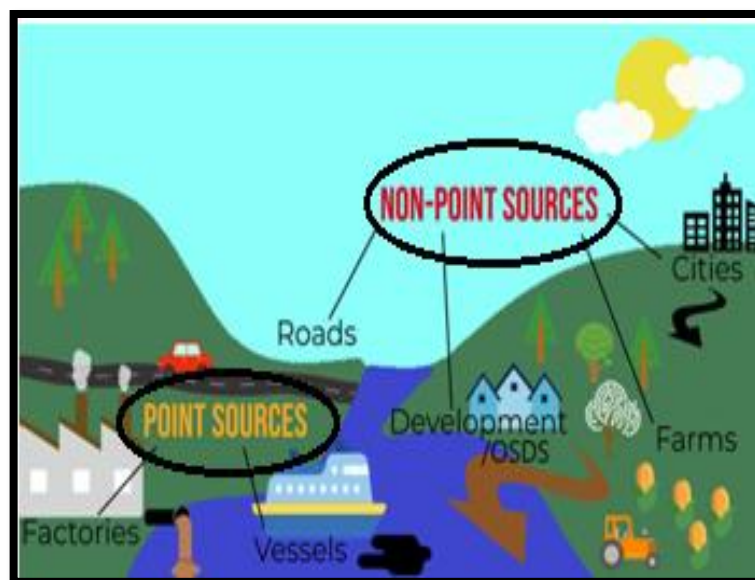
- (i) State *any two* advantages of tree planting. [2]
- (ii) What is meant by ocean acidification? What harm does it cause to the marine ecosystem? [2]
- (iii) How do xerophytes adapt to extreme arid conditions? [2]
- (iv) Social well being is building and maintaining healthy relationships and having meaningful, authentic interactions with others. Mention *any two* factors responsible for social well-being. [2]

Question 3

- (i) What causes artificial eutrophication? [2]
- (ii) As prescribed by the 1982 United Nations Convention on the Law of the Sea, EEZ is an area of the sea in which sovereign state has exclusive rights regarding the exploration and use of marine resources, including energy production from water and wind. [2]
 - (a) What is the full form of EEZ?
 - (b) What is the stretch of EEZ from a host nation's coastline?
- (iii) Environmental Science is an integrated subject. How does the study of EVS help us? [2]
- (iv) Differentiate between Parasitism and Predation citing one example each. [2]

Question 4

- (i) What are invasive species? How are they a threat to native species? [2]
- (ii) Explain water towing as a method of water conservation. [2]
- (iii) How is achieving good health a problem both in rural and urban areas? [2]
- (iv) Look at the image below and answer the following question: [2]
Bring out the differences between the two encircled words-Point sources and Non-point sources given in the picture.



SECTION B (40 MARKS)

(Attempt any four questions from this section)

Question 5

- (i) Poverty trap and environmental degradation goes hand in hand. Explain. [5]
- (ii) Rainforests are lungs of our earth and needs to be protected. What are the various threats to the rainforests? [5]

Question 6

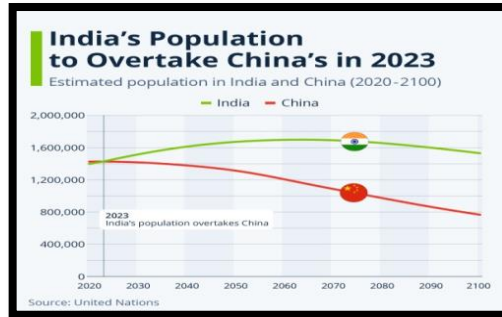
- (i) Explain the different structural components of an ecosystem. [5]
- (ii) Why are corals called 'rainforests of the sea'? How is this ecosystem under threat? [5]

Question 7

- (i) Multi-dimensional Poverty Index developed by Oxford Poverty & Human Development Initiative and UNDP uses different factors to determine poverty. [5]

Explain the various dimensions and indicators of poverty as per MPI.

- (ii) Study the graph given below and state the ill effects that will happen if India's population surpasses that of China. [5]



Question 8

- (i) When we look at a landscape with a complex, diverse community of plants and animals—such as a forest, we wonder how it came into being. Once upon a time, that land must have been an empty rock, yet today, it supports a rich ecological community consisting of populations of different species that live together and interact with one another. Odds are, that it did not happen overnight! [5]
- (a) Identify the ecological phenomenon mentioned above.
- (b) Explain the steps leading to its climax community.
- (ii) The Sustainable Development Goals are the blueprint to achieve a better and more sustainable future for all. Elaborate. [5]

Question 9

- (i) Differentiate between a food chain and a food web. [5]
- (ii) Study the picture given below and answer the question that follows [5]



Identify the interaction shown in the above picture and explain its different types with suitable examples.

Question 10

- (i) A waste water treatment plant is a physical plant where various processes are used to change the properties of wastewater in order to turn it into a type of water that can be safely discharged into the environment. [5]
- Elaborate on the various steps followed in a waste water treatment plant.
- (ii) Although the ocean covers two-thirds of the surface of the earth, it is surprisingly vulnerable to human influences. Comment. [5]