

# ENVIRONMENTAL SCIENCE

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**Maximum Marks: 70**

**Time Allowed: Three Hours**

*(Candidates are allowed additional 15 minutes for only reading the paper. They must NOT start writing during this time.)*

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*Answer all questions in Section A, Section B and Section C.*

*Section A consists of objective / very short answer questions.*

*Section B consists of short answer questions.*

*Section C consists of long answer questions.*

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

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## SECTION A - 14 MARKS

### Question 1

- (i) Raman visited his grandmother in his village during summer break. He observed that his grandmother cut the raw mangoes into small pieces, applied salt and spices to them and stored them in a ceramic jar filled with oil. [1]

Which one of the following methods of food preservation did Raman's grandmother use?

- (a) Drying  
(b) Canning  
(c) Pickling  
(d) Freezing

- (ii) **Assertion:** Dry compost toilets save water and reduce waste. [1]

**Reason:** Compost can be used as manure for crops.

- (a) Both Assertion and Reason are true and Reason is the correct explanation for Assertion.  
(b) Both Assertion and Reason are true but Reason is not the correct explanation for Assertion.  
(c) Assertion is true and Reason is false.  
(d) Both Assertion and Reason are false.
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**This Paper consists of 6 printed pages.**

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**Turn over**

- (iii) The headquarters of World Wide Fund for Nature is located in: [1]
- (a) USA.
  - (b) Canada.
  - (c) Switzerland.
  - (d) United Kingdom.
- (iv) Which one of the following methods is used to check the microbial activity of a selected soil sample? [1]
- (a) Soil salinity
  - (b) Soil pH
  - (c) Soil respiration
  - (d) Soil Crusting
- (v) An American environmental thinker was inspired by Zen Buddhism and wrote a number of poems on environment. [1]
- Name the environmentalist being referred to here.
- (vi) It has been discovered recently that Ladakh is rich in uranium deposits that have not been used till date. [1]
- Which category of resources would uranium deposits fall under?
- (vii) Study the relationship between the first and the second word given below and fill in the fourth word on that basis. [1]
- Johads : Rajasthan :: Tankas : \_\_\_\_\_
- (viii) \_\_\_\_\_ is a radical environmental advocacy group founded by Dave Foreman, Mike Rosella and Howie Wolke. [1]
- (ix) Write the expanded forms of the following: [2]
- (a) GDP
  - (b) B.O.D.

(x) Give a term for the description given below.

[4]

- (a) The cultivation of fresh water and saltwater organisms like fish, crustaceans and molluscs under controlled condition.
- (b) A system of farming where crops are grown, and livestock reared on the same farm.
- (c) The type of pyramid that has higher number of individuals in the post reproductive age group than the pre reproductive age group.
- (d) The maximum number of individuals that can be supported by an ecosystem without causing any damage to the environment.

### SECTION B - 28 MARKS

#### Question 2

[4]

(i) What is *social ecology*? State *any three* principles of Social Ecology.

OR

(ii) Write a short biographical sketch of Wendell Berry. Highlight *any two* of his contributions to environment.

#### Question 3

(i) (a) Why are tribal communities considered an integral part of an ecosystem? [1]

(b) Highlight *any two* conflicts between the tribal communities and the government. [2]

(c) Which Act was passed by the Government of India to resolve the conflict between the tribal communities and the Indian government? [1]

OR

(ii) (a) What is WTO? State *any one* of its principles. [2]

(b) Briefly discuss *any two* functions of WTO. [2]

**Question 4**

[4]

State *any four* features of New Urbanism.

**Question 5**

- (i) A species has to usually choose between two strategies in the environment for its survival. It can either fight and stay in the environment or move to a safe environment. [2]

Which strategies have been indicated above? Give *any one* feature of each of these strategies adopted by a species.

- (ii) Mention *any two* disadvantages of Macro irrigation system. [2]

**Question 6**

[4]

Traffic system of Bogota is an ideal example of the innovative measures taken by a government to ensure sustainable management of traffic.

Justify this statement by stating *any four* of such measures taken by the Government of Bogota.

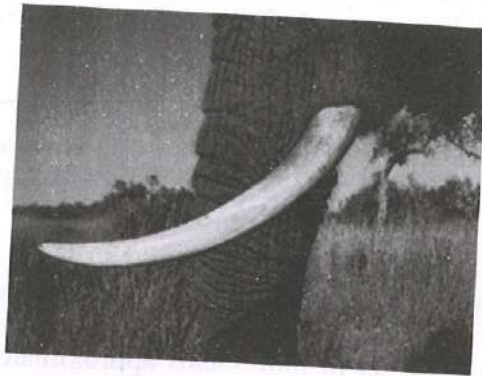
**Question 7**

According to a case study, almost eighty percent of milk is mixed with an unwanted substance. This substance may be water, starch, urea, detergent etc.

- (i) Which term is used for the unwanted substances that are added to milk? [1]
- (ii) Name *any three* food items, other than milk, to which the unwanted substances are added. Mention the unwanted substances that are added to each of these food items. [3]

### Question 8

Study the image given below and answer the questions that follow.



- (i) Which illegal trade is associated with the image shown above? [1]
- (ii) State *any three* consequences of the ban on this illegal trade. [3]

### SECTION C – 28 MARKS

#### Question 9

India suffered world's worst food crisis known as the Bengal Famine. It started in 1943 and continued even after independence leading to malnutrition, starvation and deaths.

Therefore, food security became a grave and an immediate concern for the Government of India.

- (i) Discuss *any three* reasons for this crisis in colonial India. [3]
- (ii) Which agricultural revolution was adopted by India to achieve food security? Give *any three* principles of this agricultural revolution. [4]

#### Question 10

- (i) (a) What is Cost Benefit Analysis? Give *any two* advantages and *any one* disadvantage of Cost Benefit Analysis. [4]

OR

- (b) What is IPR? Explain *any three* categories of IPR.

- (ii) A cement manufacturing company provides additional health services and regular health check-ups to its factory workers.
- (a) What kind of expenditure is incurred by the manufacturing company? [1]
- (b) Briefly explain the importance of the expenditure referred to in subpart (a). [2]

### Question 11

- (i) Rainwater harvesting is the best solution to handle the problem of water crisis in the urban areas. Support this statement by giving *four* valid reasons. [4]
- (ii) Survivorship curves represent a set of individuals approximately of the same age group plotted against time. [3]  
Discuss the *three* types of curves mentioned above with a suitable example for each type.

### Question 12

Read the passage given below and answer the questions that follow.

Mihika lives in a metropolitan city and regularly goes to a local park for a walk. She visits the park during peak hours of traffic in the evening and often returns home coughing. She also experiences shortness of breath and irritation in eyes.

- (i) Name *any two* air pollutants that have led to Mihika's physical condition. [1]
- (ii) Which programme was launched by Government of India to monitor the level of air pollution? State *any two* objectives of this programme. [3]
- (iii) Suggest *any three* steps that State Pollution Control Board can take to improve air quality standards. [3]