

ENVIRONMENTAL SCIENCE

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.)

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 [].

SECTION A - 14 MARKS

Question 1

- (i) Crude oil has been discovered in Rampur district of Uttar Pradesh in addition to the existing oilfields in Assam, Gujarat and Maharashtra. [1]

Which category of resources would these oil fields fall under?

- (a) Actual resources
- (b) Potential resources
- (c) Ubiquitous resources
- (d) Localised resources

- (ii) **Assertion:** Discharge of domestic sewage directly into rivers increases the BOD level. [1]

Reason: Domestic sewage is rich in biodegradable organic matter.

Which one of the following is correct?

- (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) Assertion is false and Reason is true.
- (iii) *Eris* are popular rainwater harvesting systems of Tamil Nadu in India. Which one of the following categories do these systems fall under? [1]
- (a) Micro irrigation
- (b) Macro irrigation
- (c) Modern irrigation
- (d) Ultra-modern irrigation
- (iv) As a part of his school project, Ramesh visited a lake to monitor the physical indicators of water quality. He measured the temperature and the conductivity of water. Which other physical indicator of water quality should Ramesh measure? [1]
- (a) Salinity
- (b) Turbidity
- (c) Alkalinity
- (d) Acidity
- (v) Depletion of _____ in the atmosphere can increase the incidences of skin cancer. [1]
- (vi) 'There is no such thing as free lunch.' Who propounded this Law of Ecology? [1]
- (vii) The practice of exporting hazardous wastes from developed countries to developing countries amounts to environmental injustice. [1]
- Name the International Treaty formulated to curb this practice.
- (viii) _____ is the zone of the Biosphere Reserve in which no human activity is allowed. [1]
- (ix) Write the expanded forms of the following: [2]
- (a) GATT
- (b) C.O.D.

- (x) Give a term for the description given below. [4]
- (a) A factual data of deaths in a population during a specific period.
 - (b) The revival of healthy rural living practices combined with urban living.
 - (c) Factors responsible for the migration of rural people to urban areas for better jobs and education opportunities.
 - (d) Government's decision to restrict the international trade to protect and promote domestic business.

SECTION B - 28 MARKS

Question 2 [4]

- (i) What is *deep ecology*? State *any three* demerits of Shallow ecology over Deep ecology.

OR

- (ii) What is WWF? State *any three* parts of the Mission Statement of WWF.

Question 3 [4]

- (i) What is *aquaculture*? Briefly explain *any three* negative effects of free trade on Aquaculture in India.

OR

- (ii) What is *social forestry*? Briefly explain *any three* types of Social Forestry.

Question 4 [4]

- (i) The government's decision of compulsory vaccination drive against Covid-19 is a good example of defensive expenditure. With reference to this example, explain *defensive expenditure*.
- (ii) State *any two* points to highlight that women's empowerment can impact the size of a population.

Question 5

[4]

- (i) Briefly discuss Malthus' views on *overpopulation* and *shortage of resources*.
- (ii) What is *sustainable development*? Give *any two* principles of Sustainable Development.

Question 6

[4]

Water crisis can lead to social unrest and misery. Justify the statement by citing the example of Cochabamba.

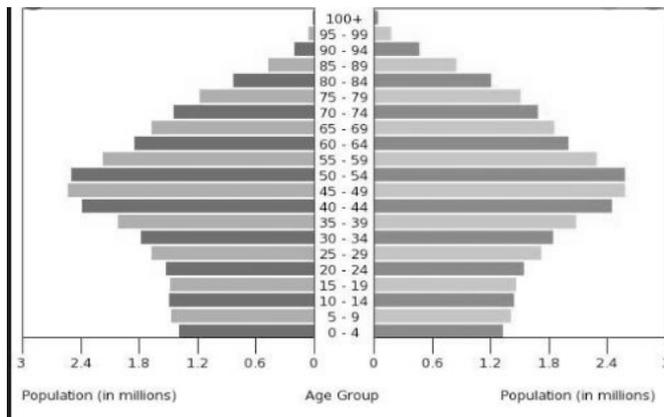
Question 7

[4]

List *any four* soil indicators. Briefly explain the significance of *any two* soil indicators.

Question 8

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



- (i) Identify the type of age pyramid shown above. [1]

- (ii) State *any three* characteristic features of the age pyramid shown above. [3]

SECTION C – 28 MARKS

Question 9

As per the statistical data, India produced approximately 316 million tonnes of food grain in the year 2021, which is claimed to be sufficient to feed everyone in our country. However, there are people who do not get sufficient food in terms of quantity or quality or both. There is a pressing need to achieve complete food security in our country.

- (i) 'However, there are people who do not get sufficient food in terms of quantity or quality or both.' Why is this so? [3]
- (ii) Suggest *any four* solutions to achieve complete food security. [4]

Question 10

- (i) (a) Discuss how Gandhi's promotion of the hand spun fabric helped in making Indian villages self-sufficient. [4]

OR

- (b) Differentiate between *tied aid* and *untied aid*. Support your answer by giving one example for each.
- (ii) Mr. Saini owns an orchard. He is delighted to know that his new neighbour is a beekeeper.
 - (a) In the light of externalities, specify the reason for Mr. Saini's delight. [1]
 - (b) State and briefly explain the type of externality in the situation given above. [2]

Question 11

- (i) Do you think Project Tiger has been a success? Justify your answer by giving *four* valid reasons. [4]
- (ii) Stewardship of Land is an ethic for the protection and management of Land. [3]
Discuss the *three* levels at which Stewardship can be practised.

Question 12

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

Radhika went to a shop to buy some household items. She bought a packet of candies that appeared colourful and attractive. However, she fell ill after consuming these candies. She consulted her family doctor who explained the harmful effects of these colourful candies on health. He also told her that these candies contained some banned colouring agents.

- (i) Give the term used for the chemical substances that enhance the flavour and appearance of food items. Briefly explain the term. [2]
- (ii) Name *any two* chemical substances that are used to enhance the flavour and appearance of food items. [2]
- (iii) State *any three* harmful effects of using these chemical substances in food items. [3]