



ICSE 2025 EXAMINATION
SPECIMEN QUESTION PAPER
ENVIRONMENTAL APPLICATIONS

Maximum Marks: 100

Time allowed: Two 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 [].

Instruction for the Supervising Examiner

Kindly read aloud the Instructions given above to all the candidates present in the Examination Hall.

SECTION A

(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) The presence of which of the following pollutants in the atmosphere has caused damage to Taj Mahal:

- (a) Dust
- (b) Nitrogen dioxide
- (c) Chlorofluorocarbon
- (d) Carbon dioxide

[Understanding]

- (ii) EURO II is an example of:

- (a) Permissible emission norms by Industry
- (b) Permissible emission norms for vehicles
- (c) Permissible emission norms on thermal power plants
- (d) Permissible emission norms on brick kilns

[Understanding]

- (iii) Study the picture given below and answer the question:



Identify the soil conservation strategy:

- (a) Contour bunds
- (b) A forested area
- (c) Terrace farming
- (d) Tree break

[Recall]

(iv) Identify the **incorrect** statement.

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

[Understanding]

(v) Effective segregation of waste at the point of generation is very important. Select the appropriate statement giving the importance of waste segregation:

- 1. Less waste goes to the landfill
- 2. Help in reducing the waste
- 3. Better for public health and environment
- 4. Waste pickers spend less time sorting through garbage

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

[Understanding]

(vi) **Assertion(A):** Natural Resource Accounting is a process of estimating the value of natural resource depletion and environment degradation due to economic activities.

Reason(R): Natural Resource Accounting just estimates the value of natural resources.

- (a) A and R are true and R explains A
- (b) A and R are true, but R is not the explanation of A
- (c) A is false but R is true.
- (d) A is true but R is false.

[Analysis]

(vii) **Assertion (A):** Rain water harvesting techniques have application in urban as well as rural areas.

Reason (R): In ancient days people did not have knowledge about water conservation.

- (a) A and R are true and R explains A.
- (b) A and R are true but R is not the explanation of A.
- (c) A is false but R is true.
- (d) A is true but R is false.

[Analysis]

(viii) Using coal and petroleum as a source of energy emits Carbon dioxide and ash, that pollutes the environment. What step should be taken to save the environment:

- (a) Replace petroleum with diesel
- (b) Replace coal with firewood for cooking
- (c) Replace thermal power with solar power
- (d) Replace the use of coal with kerosene for melting metals in furnaces.

[Understanding]

(ix) The planning of the Curitiba city is done giving highest priority to:

- (a) Urban development
- (b) Industrial development
- (c) Bus rapid transit system
- (d) Light rail transit system

[Understanding]

(x) People of Ladakh usually have dry composting toilets (DCT).

Which of the following statements is TRUE about DCT.

- (a) It is costly
- (b) It saves water
- (c) It requires electricity
- (d) It requires chemical cleaners to clean the toilet

[Analysis]

(xi) Among the statements given below select the Correct ones that describe the concept of sustainable development:

1. Planned growth with minimum damage to environment
2. Growth irrespective of the extent of damage to environment.
3. Growth that is acceptable to all stakeholders
4. Minimal developmental works to conserve environment

- (a) 1 and 4
- (b) 1 and 3
- (c) 2 and 4
- (d) 4 only

[Understanding]

(xii) The picture shown below is of a technology for cloth production.

What type of cloth is produced by this methodology?



- (a) Nylon
- (b) Silk
- (c) Rayon
- (d) Polyester

[Understanding]

(xiii) The source of electricity generated by large dams is:

- (a) Tidal wave
- (b) Stored falling water
- (c) Turbine
- (d) Generator

[Analysis]

(xiv) Rooftop rain water harvesting is practiced in cities for storing rain water. Select the correct sequence of the structures for rooftop rain water harvesting.

1. Conduit
2. Recharge structure
3. Catchment area
4. Storage tank

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

[Understanding]

(xv) A mini hydel power plant can generate electricity:

- (a) More than 100 KW
- (b) Less than 100KW
- (c) 10 to 100 KW
- (d) More than 1000 KW

[Recall]

(xvi) Sewage, a liquid domestic waste should be treated to:

1. meet the growing demand for water
2. reduce water pollution
3. safeguard public health
4. reduce the waste

Choose the correct option:

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

[Understanding]

(xvii) Fluidized bed boilers work on:

- (a) Solid waste
- (b) Liquid waste
- (c) Gaseous waste
- (d) Both solid and liquid waste

[Recall]

(xviii) Subsidies are:

- (a) Taxes imposed by the Government
- (b) Surcharges on the non-ecofriendly products
- (c) Financial aid given by a government
- (d) Fine imposed by government on act committed against the law

[Understanding]

(xix) Select the Correct pair.

- | | | |
|--------------------------|---|--------------------------|
| (a) Oak | - | Alternative to timber |
| (b) Sewage | - | Effluent treatment plant |
| (c) Coal | - | Non-conventional fuel |
| (d) Bio-degradable waste | - | Incineration |

[Understanding]

(xx) Remote Sensing Satellites are placed in:

- (a) Laboratories
- (b) Under the ground
- (c) Outer space
- (d) In a submarine

[Understanding]

Question 2

- (i) What is brain drain? [2]
[Recall]
- (ii) What do you mean by North-South divide? [2]
[Recall]
- (iii) The picture given below is of a logo of a society. [3]



- (a) What is the literal meaning of the term shown in the picture? [Recall]
- (b) Enumerate two primary objectives of the 'Dastkar' society.
- (iv) State any three objectives of sustainable development. [3]
[Recall]

Question 3

- (i) 'Reuse is better than recycling.' Give any two reasons to support the statement. [2]
[Understanding]
- (ii) Soil is a valuable natural resource vulnerable to erosion during heavy rainfall in hilly terrain. Describe an effective method to reduce soil erosion in such areas. [2]
[Understanding]
- (iii) List *any three* impacts of siltation of waterways. [3]
[Recall]
- (iv) Lila resides in a remote village with her family and relies on fuelwood for cooking. Identify any three consequences of utilizing fuelwood as a cooking fuel. [3]
[Understanding]

SECTION B

(Answer *any four* questions from this Section.)

Question 4

- (i) The picture given below is of water conservation management. [5]



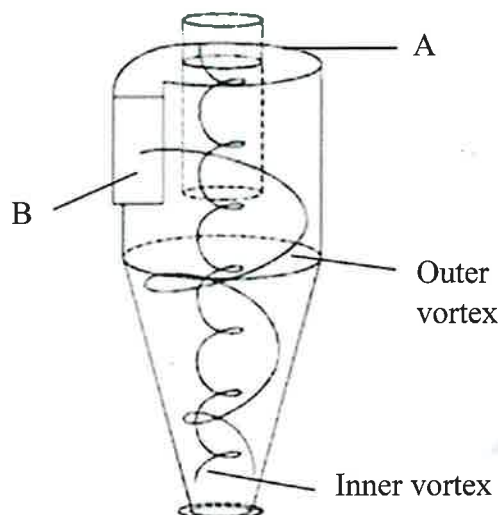
- (a) Identify the type of water conservation management.
(b) Describe any four aims of the identified water management. [Apply]
- (ii) What is a leachate? State *any three* effects of leachate. [5]
- [Recall]
- (iii) Give example of an alternative for timber in paper Industry. [5]
- Why is there a need to find alternatives to timber? (*Any four points*) [Analysis]

Question 5

- (i) Why is the secondary treatment in a water treatment plant called biological treatment? What happens in tertiary treatment? After which stage it is safe to discharge the treated water in water bodies and why? [5]
- [Apply]
- (ii) NGOs work for the betterment of the society and environment. In this context state the role of NGOs in Child's Welfare. [5]
- [Understanding]

(iii)

[5]



A diagram of an air pollution control device is shown above.

Name the device and explain the working principle. Identify the entry point of the dust laden air and the exit point for the clean air in the above diagram labelled as 'A' and 'B'.

[Recall]

Question 6

- (i) Enumerate the role of local people in Joint Forest Management?

[5]

[Recall]

- (ii) '*Wetlands are vital for human survival.*' List *any three* importance of wetlands. Name the international convention for protecting the wetlands. Where was the Convention adopted?

[5]

[Recall]

- (iii) What is TTZ? List *any three* legislative measures to protect the Taj Mahal monument.

[5]

[Recall]

Question 7

- (i) Plastic has become an integral component of our daily lives, encompassing various items such as food packaging, toys, storage materials, furniture, household appliances, and electronic devices. According to estimates from the United Nations, the world consumes a staggering 500 billion plastic bags annually, with half of this amount comprising single-use plastics like bags, straws, cups, plates, and bottles.

[5]



- (a) Why should single-use plastic be banned? Give any two reasons.
- (b) Suggest any three alternatives that can be used to replace plastic.

[Application]

- (ii) Explain the steps involved in Environmental Impact assessment. [5]

[Recall]

- (iii) Modern technology brings with it several advantages, yet it is not without its limitations. Enumerate any three advantages and any two limitations of modern technology. [5]

[Understanding]

Question 8

- (i) List *any five* problems faced with large dams. [5]

[Analysis]

- (ii) Enumerate any five positive actions you have taken in the past week to contribute to the conservation of our natural resources. [5]

[Analysis]

- (iii) 'Bubble Theory' is one of the strategies for reducing air pollution. Why it is known as Bubble Theory? Give an account of the theory. [5]

[Recall]

Question 9

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



- (a) Where is it situated?
- (b) List *any four* sustainable practices adopted by the people of Auroville. **[Recall]**
- (ii) Remote sensing satellites play a crucial role in gathering information about Earth's surface. In this context state any five applications of remote sensing technology contributing to fields of environmental monitoring, urban planning, agriculture, and disaster response." [5] **[Understanding]**
- (iii) Water is the elixir of life , a very important natural resource. Your science teacher wants you to prepare a project plan for assessment. "How to save water?" [5]
- (a) Write any three ways that you will suggest to bring awareness in your neighbourhood.
- (b) Recommend any two methods to prevent further depletion of the underground water table. **[Application]**

**ICSE 2025 – SPECIMEN PAPER****DRAFT MARKING SCHEME – ENVIRONMENTAL APPLICATIONS**

Question 1		[20]
(i)	(b) Nitrogen dioxide	
(ii)	(b) Permissible emission norms for vehicles	
(iii)	(d) Tree break	
(iv)	(d) Forests do not contribute to soil conservation.	
(v)	(a) 1 and 2	
(vi)	(d) A is true but R is false.	
(vii)	(d) A is true but R is false.	
(viii)	(c) Replace thermal power with solar power	
(ix)	(c) Bus rapid transit system	
(x)	(b) It saves water	
(xi)	(b) 1 and 3	
(xii)	(b) Silk	
(xiii)	(b) Stored falling water	
(xiv)	(b) 3, 1, 2 and 4	
(xv)	(a) More than 100 KW	
(xvi)	(a) 1, 2 and 3	
(xvii)	(a) Solid waste	
(xviii)	(c) Financial aid given by a government	
(xix)	(b) Sewage - Effluent treatment plant	
(xx)	(c) Outer space	
Question 2		
(i)	When skilled persons go to foreign countries for the sake of job and opportunities.	[2]
(ii)	It is an imaginary division between developed (north) and developing (south) countries. The North includes—USA, Canada, France and South includes India, Pakistan, Sri Lanka etc.	[2]

(iii)	(a) Craftsmen or Artisan (b) - To support traditional Indian craftspeople, many of them women and village based, with the objective of helping craftspeople regain their place in the economic mainstream - To project India's craft and cultural heritage and create its awareness among the Indian urban consumers	[1+2]
(iv)	- Concern for environmental protection - Need to conserve the resources for future generation - It is a pro-stable economic growth.	[3]
Question 3		
(i)	Reuse is making use of waste in another usable form, without using much energy. Recycle requires a lot of energy and machinery.	[2]
(ii)	Contour bunding is a land management practice for marginal, sloping, and hilly land where the soil productivity is very low. It involves the placement of lines of stones along the natural rises of a landscape.	[2]
(iii)	- The depth of the water bodies decreases - Effects the aquatic life - Chances of flood	[3]
(iv)	- Irritation in throat and redness of eyes. - Respiratory tract infection. - Early aging	[3]
Question 4		
(i)	Watershed - It is a surface area where rain water is collected and drained through a common point. - To conserve soil in the area. - To conserve water for sustainable use. - Rainwater harvesting and recharging of ground water table.	[1+4]

(ii)	It is a foul odoured yellowish orange fluid coming out from a garbage heap due to the precipitation of water. - It will contaminate the aquifers, if it reaches down. - It will pollute the soil, if it reaches to a field with rainwater. - It will pollute the surface water	[5]
(iii)	Bagasse - To stop deforestation - To prevent soil erosion - To Save the wild life - To maintain the O₂ – CO₂ balance	[5]
Question 5		
(i)	Secondary treatment requires microorganisms for breaking down the nutrient present in the waste water. In tertiary treatment the waste water is treated with chlorine or UV rays to kill the pathogens present in the water. After the secondary treatment the nitrate and the phosphate content of water get reduced as the microorganisms feed on the nutrient in presence of oxygen. It is safe to discharge the waste water after secondary treatment, it will not cause eutrophication.	[5]
(ii)	- Shelter for the homeless children. - Providing food and basic education to the children - Setting up health camps for the children. - Fighting for children's right - To work against child trafficking	[5]
(iii)	Cyclone separator. It is an air pollution control device. - At the bottom of the cyclone body, the gas turns and spirals up through the center of the tube and out of the top of the cyclone. - The centrifugal force of the spinning gas stream forces large particles toward the cyclone walls. - Gravity causes the large particles to travel down the cyclone and into a hopper. - The clean gas escapes out. - 'B' is the entry point and 'A' is the exit point	[5]



Question 6		
(i)	Joint forest management is a joint venture of local people and forest officers. - The local people know the forest very well, so their knowledge is used while planning to conserve the forest. - The local people are the guardian of the forest. - They act as tour guide for the tourist. - They use the non- timber products of the forest.	[5]
(ii)	- They act as a sponge and can adsorb large amount of water and releases slowly. - It supports a large variety of flora and fauna. - Prevents flood. Ramsar Convention - It took place in Ramsar in Iran.	[5]
(iii)	Taz trapezium Zone. It is a 10,400 sq Km protected area surrounding three heritage building Agra Fort, Fatehpur Sikri and Taj Mahal - Tulsi plantation around the area. - No fuel driven vehicle around Taj mahal - No industry in the close vicinity of Taj Mahal, if there are industries then they have to ban the use of coal as fuel and install air pollution control devices	[5]
Question 7		
(i)	(a) It is non-biodegradable. - Burning of plastic releases toxic gases. - Single use plastic is made by using a variety of toxic chemicals and colours. - This can cause harm to the environment. <i>(any two)</i> (b) - Paper - Cardboard - Bio-degradable plastic	[2+3]
(ii)	1. Screening: Whether the proposed project requires EIA or not 2. Scoping: Identifies the key issues and impacts that should be further investigated. 3. Mitigation: Recommends actions to reduce and avoid the potential adverse environmental consequences of the developmental project. 4. Reporting: This stage present the result of EIA in a form of a report. 5. Decision making: Whether the project should be rejected, approved or needs further investigation	[5]

(iii)	Advantages: - The work can be done much faster and with precision - The productivity is very high. - Advancement in all fields – medical, engineering, pharmacology, agriculture - The robotics and AI are the product of modern technology <i>(Any three)</i> Limitations: - Short term gain. - People are becoming lazy, dependence on machine has increased - Unemployment, as machines and robots are working instead of humans. <i>(Any two)</i>	[3+2]
Question 8		
(i)	- Inundation of forest or large area of land. - The river is deprived of its sediment load. - The volume of water of the river decreases which affects the aquatic life. - Global warming due to generation of green house gases. - Displacement and dislodgement of large population of people due to dam construction	[5]
(ii)	- I refused the plastic bag given by the vegetable vendor and use my cloth bag. - I took bath using a bucket and mug instead of the shower. - I made a compost bin and asked my mother to put the kitchen's biodegradable waste in the bin. - Putting off the light and fan or Ac switch when nobody is there in the room. - It was my birthday I got a lot of gifts, I carefully opened the gift wrap, took out the gift, neatly folded the wrap and kept it for reusing.	[5]
(iii)	It is an air pollution control concept. Here atmosphere is considered as a glass 'Bubble' and the gaseous pollutants are entering in the bubble, so it is called the 'Bubble Theory' - The term 'bubble' means, an air pollution control system, which permits aggregate measurement of allowable emissions, for a single category of pollutant. - A plant complex with several facilities can decrease pollution from some facilities while increasing it from others, so long as total results are equal to or better than previous limits.	[5]
Question 9		
(i)	(a) In Tamil Nadu (b) - Harnessing renewable source of energy, such as solar, wind etc. - Waste management- segregation of waste and practice of 3 R's. - Organic farming. - Rain water harvesting. - They use cycle or electric vehicles for transportation. <i>(any four)</i>	[1+4]

(ii)	Environmental Monitoring: Studying climate patterns and changes. Agriculture: Monitoring soil conditions and moisture levels. Urban Planning: Land-use planning and development. Disaster Management: Early detection and monitoring of natural disasters like floods, earthquakes, and wildfires.	[5]
(iii)	(a) - A placard rally for the importance of water. - Organising a street play with the help of the local club. - Arranging a quiz competition for the adults using audio-visual. A token prize for the winner. (b) - Rain water harvesting for recharging the aquifer. - Not to dig too many tube wells. - Recycling of waste water.	[5]