

**ISC SEMESTER 1 EXAMINATION**  
**SPECIMEN QUESTION PAPER**  
**ENVIRONMENTAL SCIENCE**  
**PAPER - 1**  
**(THEORY)**

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*Maximum Marks: 70*

*Time allowed: One and a half hours*

*(Candidates are allowed additional 15 minutes for only reading the paper.)*

**ALL QUESTIONS ARE COMPULSORY**

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

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**Question 1**

**[20]**

**Answer the following questions by choosing the correct option:**

- (i) Principles of Deep Ecology are:
  - (a) Population, Land Management, Conservation Easement
  - (b) Vital needs, Diversity, Quality of Life
  - (c) Obligation of action, Policy change, Community Stewardship
  - (d) Simple living, Human interference, Conservation Easement
- (ii) Which of the following options is one of the issues which is addressed by Eco-Feminism?
  - (a) Non- violence
  - (b) Grass root Democracy
  - (c) Toxic waste dumping
  - (d) Land Management
- (iii) One of the characteristics of k strategists is:
  - (a) Small body size
  - (b) Short generation time
  - (c) Ability to disperse off springs widely
  - (d) Individuals reproduce more than once in a lifetime

- (iv) The phase of Demographic Transition in India is:
- (a) Stage 5
  - (b) Stage 3
  - (c) Stage 2
  - (d) Stage 4
- (v) Factors regulating the size of a population are known as:
- (a) Technological Factors
  - (b) Chemical Factors
  - (c) Abiotic Factors
  - (d) All of the above
- (vi) The term Ecosystem was coined by:
- (a) Charles Darwin
  - (b) Alexander von Humboldt
  - (c) Tansley
  - (d) Carl Ritter
- (vii) The main consequence of Genetic Erosion is:
- (a) Economic Downfall
  - (b) Weakened immune defense mechanism
  - (c) Increase in noise pollution
  - (d) Climate Change
- (viii) Conservation of Forests is important because:
- (a) Earth looks more beautiful
  - (b) It keeps a check on soil erosion
  - (c) Global Warming will increase
  - (d) It provides fuel wood and timber

- (ix) One of the objectives of Scientific Forestry is:
- (a) Enabling sustained harvest of forest products
  - (b) To provide oxygen availability
  - (c) To increase natural beauty of landscapes
  - (d) Reducing sound pollution
- (x) The following is not a Greenhouse gas:
- (a) Carbon Monoxide
  - (b) Carbon Dioxide
  - (c) Methane
  - (d) Ozone
- (xi) Which of the following is the cause of water contamination?
- (a) Sewage
  - (b) Forest Fire
  - (c) Noise Pollution
  - (d) Desertification
- (xii) Which of the following is not an aim of social forestry?
- (a) To meet the need of fuel, wood and fodder
  - (b) To create an ecological balance
  - (c) To utilize the waste land
  - (d) Ecotourism
- (xiii) Increasing Gap between developing and developed countries causes:
- (a) Change in landscapes
  - (b) Migration
  - (c) Atmospheric Changes
  - (d) Pollution

- (xiv) One of the main problems of Urban Areas is:
- (a) Reverse Migration
  - (b) Housing
  - (c) Non- violence
  - (d) Earthquakes
- (xv) Cuba has a system of Urban Organic Garden called:
- (a) Organic Farming
  - (b) Organic Agriculture
  - (c) Organoponics
  - (d) Tissue Culture
- (xvi) Constructive Pyramid is:
- (a) Broad base Pyramid
  - (b) Urn shaped Pyramid
  - (c) Triangular Pyramid
  - (d) Bell shaped Pyramid
- (xvii) Which of the following is a method of In-situ Conservation?
- (a) Orchards
  - (b) Protected areas
  - (c) Offsite collections
  - (d) Cryopreservation
- (xviii) Which of the following is an example of secondary air pollutant?
- (a) Ozone
  - (b) Methane
  - (c) Carbon monoxide
  - (d) Sulphur dioxide

- (xix) Environmental Ethics in Deep Ecology include:
- (a) Land management
  - (b) Water pollution
  - (c) Social Justice
  - (d) Wilderness Preservation
- (xx) Which of the following is a Biological Soil Quality Indicator?
- (a) Soil Respiration
  - (b) Soil Crusting
  - (c) Soil Aggregation
  - (d) Soil Compaction

**Question 2**

[5]

*The following questions consist of two statements each- Assertion(A) and Reason(R), to answer these questions, mark the correct alternative as directed below:*

- (i) Assertion: Automobiles account for 60% of air pollution.  
Reason: Fly ash is not present in automobile exhaust.
- (a) Both assertion and reason are true, and reason is the correct explanation of assertion.
  - (b) Both assertion and reason are true, but reason is not the correct explanation of assertion.
  - (c) Assertion is true but reason is false.
  - (d) Both assertion and reason are false.
- (ii) Assertion: Chemicals released in atmosphere with force in the form of mist or vapours are called aerosols.  
Reason: Jet aeroplanes release aerosols; which contain CFC.
- (a) Both assertion and reason are true, and reason is the correct explanation of assertion.
  - (b) Both assertion and reason are true, but reason is not the correct explanation of assertion.
  - (c) Assertion is true but reason is false.
  - (d) Both assertion and reason are false.

- (iii) Assertion: Excess of nitrates in drinking water are harmful for infants.  
Reason: Nitrates are responsible for blue baby syndrome.
- (a) Both assertion and reason are true, and reason is the correct explanation of assertion.
  - (b) Both assertion and reason are true, but reason is not the correct explanation of assertion.
  - (c) Assertion is true but reason is false.
  - (d) Both assertion and reason are false.
- (iv) Assertion: Discharge of domestic sewage into river results in decrease in BOD.  
Reason: Domestic sewage is rich in non-biodegradable organic matter.
- (a) Both assertion and reason are true, and reason is the correct explanation of assertion.
  - (b) Both assertion and reason are true, but reason is not the correct explanation of assertion.
  - (c) Assertion is true but reason is false.
  - (d) Both assertion and reason are false.
- (v) Assertion: There is a mass migration of the rural people to urban areas.  
Reason: Poverty, lack of better job opportunities, lack of education and health facilities, insecurity due to natural disasters like floods, hurricanes etc. result in migration from rural to urban areas.
- (a) Both assertion and reason are true, and reason is the correct explanation of assertion.
  - (b) Both assertion and reason are true, but reason is not the correct explanation of assertion.
  - (c) Assertion is true but reason is false.
  - (d) Both assertion and reason are false.

### Question 3

[5]

*Read the following passage and answer the questions given below by selecting the correct option.*

DEWAT is a community management plan and is built using local labour. It is a natural waste water treatment system using bioremediation put together in different conditions according to specific requirements, objective is to improve quality of environment.

DEWAT has many advantages: it can be decentralized to cater to a single household, wastewater can be recovered and recycled for irrigation. It involves low primary investment, special technologies or power-machines, low power. Local communities can easily manage operation and maintenance. Farmers can easily use drained water in their fields.

- (i) DEWATS is the abbreviation of:
  - (a) Decentralized Economic Water and Terrestrial Systems.
  - (b) Decentralized Waste Water Treatment Systems.
  - (c) Decentralized Aerobic Waste Treatment Systems.
  - (d) Decentralized Anaerobic Waste Treatment Systems.
  
- (ii) DEWATS can be decentralized as it can cater to:
  - (a) A single household.
  - (b) Numerous picnic spots.
  - (c) A chain of hotels.
  - (d) A number of industries.
  
- (iii) DEWATS is better than centralized system as the centralized system requires:
  - (a) Specific infrastructure like stabilization pole.
  - (b) Installation cost is high.
  - (c) Skilled labour.
  - (d) All of the above.
  
- (iv) DEWATS provides a solution for scarcity of water as:
  - (a) Water can be recovered and recycled.
  - (b) Water can drain out in a larger area.
  - (c) Water can be carried to long distances.
  - (d) It reduces waste water pollution by 70%.

- (v) Waste water is treated at affordable cost in DEWATS as:
- (a) It can function in limited space.
  - (b) Low operation and maintenance cost.
  - (c) Reliable and long lasting construction.
  - (d) All of the above.

**Question 4**

[5]

*Read the following passage and answer the questions given below by selecting the correct option.*

Mahatma Gandhi proposed a development model advocating the need for self-sufficient village communities and a balance between human and nature. This development model aimed at creating self-sufficient villages and decentralising economic power. To attain this, Gandhi encouraged the development of Khadi and Village industries as opposed to the large-scale manufacturing units.

The primary objective behind Gandhi's promotion of Khadi was to ensure work for all. He wanted the cottage industries to use local, raw material and the finished products to be sold in the markets. These industries required low investment and maximised the use of labour which helped in solving the problem of unemployment. Hence, rural industries helped in decentralisation of economic activities and ensured more equitable distribution of wealth.

- (i) Mahatma Gandhi advocated the balance between human and nature which implied:
- (a) Preservation and conservation of nature in its original form.
  - (b) Primitive lifestyle of human beings.
  - (c) Judicious use of resources.
  - (d) Minimum use of resources.
- (ii) Gandhi's development model aimed to:
- (a) Create Self-sufficient villages and decentralise economic power.
  - (b) Create a new form of government.
  - (c) Empower the villages through the funding received from the NGOs.
  - (d) Attain rural development with the help of World Bank.

- (iii) Promotion of Khadi ensured:
  - (a) Work for all.
  - (b) Work for women.
  - (c) Work for the oppressed community.
  - (d) Rebellion against colonialism.
- (iv) A self-sufficient village ensures:
  - (a) Production of essential commodities in the villages.
  - (b) Small scale manufacturing units.
  - (c) Use of local tools that are affordable.
  - (d) All of the above.
- (v) Gandhi promoted cottage industries against large manufacturing units because:
  - (a) They use local and raw materials and employ the local people.
  - (b) They attract people from cities resulting in reverse migration.
  - (c) They supply the products to the slum dwellers in the cities.
  - (d) They increase the export of raw materials to other countries.

**Question 5**

**[20]**

***Complete the following statements by choosing the correct option:***

- (i) The N.A.M.P is the abbreviation of\_\_\_\_\_.
  - (a) National Atmosphere Monitoring Programme.
  - (b) National Air Monitoring Programme.
  - (c) National Air Mapping Process.
  - (d) National Air Measurement Programme.
- (ii) The two examples of chemical indicators of soil health are \_\_\_\_\_.
  - (a) pH value and soil salinity.
  - (b) Soil respiration and soil organic matter.
  - (c) Nitrogen mineralization and carbon mineralization.
  - (d) Soil infiltration and soil percolation.

- (iii) Deep ecology recognizes the value of every living organism irrespective of its \_\_\_\_\_.
- (a) Utility to man.
  - (b) Aesthetic value.
  - (c) Economic benefits.
  - (d) Ecological value.
- (iv) According to Malthus, there are two ways by which population can be kept under check namely \_\_\_\_\_.
- (a) Positive check and preventive check.
  - (b) Passive check and active check.
  - (c) Voluntary check and involuntary check.
  - (d) Exponential check and geometrical check.
- (v) Sanctuaries are species centric whereas national parks are \_\_\_\_\_ centric.
- (a) Habitat
  - (b) Region
  - (c) Ecosystem
  - (d) Biodiversity
- (vi) Increase in temperature reduces the solubility of \_\_\_\_\_ which is essential for aquatic plants and animals.
- (a) Oxygen
  - (b) Carbon Dioxide
  - (c) Salts
  - (d) Minerals
- (vii) One of the most sustainable cities Curitiba went in for large scale \_\_\_\_\_ system in the late 1960s.
- (a) Public transport.
  - (b) Equitable distribution.
  - (c) Vocational training.
  - (d) Pollution control.

- (viii) Composting is biodegradation of organic matter with the help of microorganisms, when earthworms are added to the compost the product is called\_\_\_\_\_.
- (a) Vermicompost
  - (b) Farmyard manure
  - (c) Green manure
  - (d) Biofertilizer
- (ix) New urbanism is a concept where the planners attempt to integrate the best features of both\_\_\_\_\_.
- (a) Rural And Urban Living.
  - (b) Ultramodern Technology And Primitive Technology.
  - (c) Sophisticated And Expensive Design.
  - (d) Industrialization And Urbanization.
- (x) One of the main goals of WWF is to\_\_\_\_\_.
- (a) Conserve biodiversity.
  - (b) Raise funds for the conservation of soil.
  - (c) Mobilize funds for the people.
  - (d) Protection of ozone layer.
- (xi) The decomposition of the organic matter in soil is caused by\_\_\_\_\_.
- (a) Macro organisms
  - (b) Earthworms
  - (c) Root nodules
  - (d) Micro organisms
- (xii) \_\_\_\_\_ is the ability of water to conduct electric current which leads to an increase in its value with the increase in the concentration of ions.
- (a) Turbidity
  - (b) Electrical conductivity
  - (c) Salinity
  - (d) Hardness

- (xiii) \_\_\_\_\_ life expectancy is a trait of r strategists.
- (a) Medium
  - (b) Short
  - (c) Long
  - (d) Wide
- (xiv) J shaped growth form is also known as \_\_\_\_\_.
- (a) Sigmoid
  - (b) Exponential
  - (c) Logistic
  - (d) Convex
- (xv) \_\_\_\_\_ loss is the greatest threat to the variety of life on the planet earth.
- (a) Biodiversity
  - (b) Species
  - (c) Genetic
  - (d) Habitat
- (xvi) Carbon markets are one of the attempts to mitigate the growth of \_\_\_\_\_ at national and international level.
- (a) Greenhouse gases
  - (b) Ozone depletion
  - (c) Aerosols
  - (d) Suspended particulate matter
- (xvii) To study the \_\_\_\_\_ of environment is one of the objectives of Air Quality Monitoring.
- (a) Scavenging behaviour
  - (b) Dispersing
  - (c) Liberating behaviour
  - (d) Limiting factor

- (xviii) The colourless, odourless gas named ozone is the main constituent of \_\_\_\_\_ smog.
- (a) Phytochemical
  - (b) Photochemical
  - (c) Biochemical
  - (d) Electrochemical
- (xix) Cutting down of trees is \_\_\_\_\_ in Curitiba and two trees are planted for each cut down.
- (a) Permitted
  - (b) Prohibited
  - (c) Regulated
  - (d) Monitored
- (xx) Gary Snyder was a popular poet dealing with environmentalism and \_\_\_\_\_.
- (a) Marxism
  - (b) Zen Buddhism
  - (c) Socialism
  - (d) Imperialism

**Question 6**

**[10]**

*Choose the correct terminology from the options given below.*

- (i) Collecting the rain water and thereafter storing it underground ensuring water supply during the time of water shortage.
- (a) Rain Water Harvesting
  - (b) Roof Water Harvesting
  - (c) Ground Water Recharge
  - (d) Water Harvesting
- (ii) A license that allows the holder to emit one ton of carbon di oxide is called.
- (a) Carbon Credit
  - (b) Carbon Trading
  - (c) Carbon Footprint
  - (d) Carbon Fund

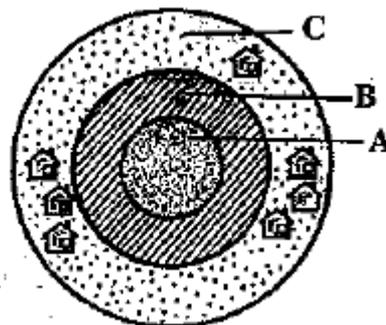
- (iii) The management that recognizes the symbiotic relationship between people and forests and treats people as partners and stakeholders.
  - (a) Joint Forest Management.
  - (b) Forest Protection Committee.
  - (c) Village Forest Council.
  - (d) National Forest Policy.
- (iv) The diagrammatic representation of the age structure of a population.
  - (a) Population Pyramid
  - (b) Population Graph
  - (c) Population Dynamics
  - (d) Population Curve
- (v) The development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.
  - (a) Sustainable Development.
  - (b) Sustainable Management.
  - (c) Holistic Development.
  - (d) Judicious Development.
- (vi) A belt of trees or shrubs maintained for the purpose of shelter from wind, sun and snow drift.
  - (a) Agroforestry
  - (b) Shelterbelts
  - (c) Plantations
  - (d) Silviculture
- (vii) The maximum number of species that an environment can sustain in a given set of conditions.
  - (a) Limiting factors
  - (b) Carrying capacity
  - (c) Community
  - (d) Population

- (viii) An act of leaving the place of residence that reduces the size of the population.
- (a) Migration
  - (b) Immigration
  - (c) Emigration
  - (d) Floating population
- (ix) A form of tourism in which people are encouraged to visit wilderness or natural environment.
- (a) Excursion
  - (b) Ecotravel
  - (c) Pilgrimage
  - (d) Ecotourism
- (x) A measure of light transmission through water when water becomes turbid and indicates the presence of pollutants.
- (a) Acidity
  - (b) Salinity
  - (c) Turbidity
  - (d) Alkalinity

**Question 7**

[5]

The following diagram represents a Biosphere Reserve. Study the diagram and answer the questions that follow.



- (i) Which is the part labelled A?
- (a) Core zone
  - (b) Buffer zone
  - (c) Protected zone
  - (d) Central zone
- (ii) In which zone is no human activity is allowed?
- (a) Middle zone
  - (b) Buffer zone
  - (c) Core zone
  - (d) Manipulation zone
- (iii) In a biosphere reserve, multiple use of land is permitted by \_\_\_\_\_.
- (a) Declaring it a protected area.
  - (b) Dividing it into different zones each for a particular activity.
  - (c) By issuing the license for a different activity.
  - (d) By allowing the human settlements to practice agriculture.
- (iv) In which zone can several human activities occur?
- (a) Outer zone
  - (b) Manipulation zone
  - (c) Core zone
  - (d) Buffer zone
- (v) Which of the following is not one of the main objectives of biosphere reserve?
- (a) Conservation of wild animals and plants
  - (b) Sustainable development
  - (c) Scientific research, education and monitoring
  - (d) Captive breeding