

Roll No:

Total No. of Questions : 09]

[Total No. of Pages :02

Paper ID [CE216]

(Please fill this Paper ID in OMR Sheet)

B.Tech. (Sem. - 4th)

ENVIRONMENTAL SCIENCE (CE - 216)

Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

Section - A

(10 × 2 = 20)

Q1)

- a) Define ecosystem. What are its components?
- b) Differentiate between renewable and non-renewable resources giving examples of each.
- c) List four biodiversity hot spots of India.
- d) What are the major sources of Air Pollution?
- e) Explain the effects of Noise Pollution.
- f) Differentiate between soil erosion and land degradation.
- g) What is meant by sustainable development?
- h) "Diminishing means and increasing wants are the two root causes of all environmental problems" Comment on the statement.
- i) Establish environmental protection as part of human rights.
- j) Discuss the role of information technology in environment and human health.

Section - B

(4 × 5 = 20)

- Q2) Population projections are quite often mathematically modelled with a logistic growth curve of the form $dN/dt = rN(1 - N/K)$ where N is the population size, r is the growth rate and K is the carrying capacity of the environment. Prove that the maximum sustainable yield will be obtained when the population is half the carrying capacity.
(Maximum sustainable yield is defined as the maximum rate at which individuals can be removed from the system without reducing the population size.)
- Q3) "Agricultural Revolution though increased productivity, brought in environmental degradation". List out the major environmental problems associated modern agricultural practices.
- Q4) Critically evaluate the issues in adoption of nuclear energy options.
- Q5) Discuss the energy flow through a built environment.
- Q6) Consider the vehicular exhaust as a source of air pollution and explain the mechanism of photochemical smog formation.

Section - C

(2 × 10 = 20)

- Q7) Explain the importance of value education, awareness and community participation in environmental protection activities in India.
- Q8) List two environmental problems from typical rural and urban set up in India. Explain why each is a problem and describe how more than one system (for example, air, water, land etc.) is affected in each case. Also, bring out a conceptual interactive framework of the systems.
- Q9) Write short notes on:
- Energy plantation in carbon sequestration.
 - Carbon credits and carbon trading.
 - Biomass and biogas.
 - Population explosion and population stabilisation.