Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Instrumentation & Control Engineering) (Sem.–7)
ENVIRONMENTAL INSTRUMENTATION & SAFETY
Subject Code : DE-3.5
M.Code : 77222

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :
1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

Q1. Write briefly :

a) List the four conceptual spheres in the earth's environment.

b) Why is the interrelationship of the ecosystem important in pollution management?

c) Differentiate between primary and secondary air pollutants.

d) What is meant by adiabatic lapse rate?

e) State the Lambert's law.

f) How is noise measured? What is the unit of measurement?

g) Name any two instruments for radioactivity measurement.

h) What is the purpose of equalization in waste management?

i) List any two methods by which petrochemical industry wastes are treated.

j) Mention any two specific pollutants from cement industry with their point of origin.

SECTION-B

Q2 From the basic principles of ecological interaction, deduce in the context of waste management that *'in nature, there are no wastes, but only resources out of place'*.

Q3 Define and contrast between emission inventory and emission factor. Discuss with a suitable example.

Q4 List and describe the physiological effects of Noise pollution.

Q5 Explain the classification of hazardous waste.

Q6 List and describe any two air pollution control measures in automobiles.

SECTION-C

Q7 Explain the suitable instrumental methods for the analysis of the following substance :

    a) ammonia   b) benzene   c) cadmium   d) Sodium

Q8 a) Compare the merits and demerits of aerobic and anaerobic digestion in wastewater treatment.

    b) Describe environmental issues associated with land disposal of hazardous waste.

Q9 a) Explain the potential use of Remote sensing and GIS in pollution monitoring and management. Take a typical case study.

    b) Explain using examples the concept of biosensors in pollution monitoring.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.