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

Total No. of Questions : 09

B.Tech.(CE) (2011 Onwards E-I & II) (Sem.–7,8)

ADVANCED ENVIRONMENT ENGINEERING

Subject Code : BTCE-815

M.Code : 71874

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

1. Answer briefly :

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

b) How are sources of air pollution classified? Give one example each.

c) Differentiate between primary and secondary air pollutants.

d) What is meant by atmospheric stability?

e) Express 310 ppm of CO_2 in mg/L and percentage. Assume 1 atm and 25°C (Given, C – 12, O – 16).

f) What is Noise? Why is it considered as a pollutant?

g) What is meant by LCA?

h) What is the 3 R's concept in solid waste management?

i) List **any two** disposal methods of hazardous wastes,

j) Define risk and hazard.

SECTION-B

2. From the basic principles of ecological interaction deduce in the context of solid wastes that 'in nature there is no waste, but only resources out of place'.

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

4. List and describe the physiological effects of Noise pollution.

5. Explain the classification of hazardous waste.

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

SECTION-C

7. a) What is meant by 'inversion'? Explain the different types of inversions.

   b) Applying mass balance around the system for a room having volume V m^3, air exchange rate I per hour, source strength S mg/h, indoor concentration of target pollutant C mg/m^3 and decay rate K per hour, derive a general equation to find out the indoor concentration of the pollutant at any time t. Also, deduce the equation for indoor concentration of a conservative pollutant with negligible ambient air concentration and zero initial indoor concentration.

8. a) Explain the concept of integrated solid waste management.

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

9. a) Explain the Dose - response methodology in risk assessment.

   b) Sketch and explain the patterns of plume behavior.

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.