



Printed Pages : 3

CE – 033

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0038

Roll No.

B. Tech.

(SEM. VIII) EXAMINATION, 2006-07

ENVIRONMENTAL POLLUTION CONTROL

Time : 3 Hours]

[Total Marks : 100

*Note : Attempt **all** questions. All questions carry **equal** marks.*

- 1 Attempt any **two** parts of the following :
 - (a) It is estimated that about 3.1×10^{12} moles of nitrogen are fixed per year on land by bacteria whereas about 25×10^{12} moles of nitrogen are taken by terrestrial plants per year. Explain the difference by the cycling of nitrogen in the environment. Where does the excess nitrogen go?
 - (b) Discuss the correlation between second law of thermodynamics and ecological pyramids as well as the ecological diversity.
 - (c) What is the role/importance of population dynamics in ecosystem stability? Explain with examples.

- 2** Attempt any **two** parts of the following :
- (a) How is respirable Particulate Matter (PM) defined in Indian standards? Name the instrument you used for the determination of ambient PM. What is the role of cyclone in this unit? What is the importance of particle size and shape in causing respiratory problems in humans?
 - (b) Describe one method each for the removal of SO₂ and NO₂ from industrial stacks.
 - (c) Describe the major pollutants emitted from the petrol and diesel vehicles. What are the methods to control this pollution?
- 3** Attempt any **four** parts of the following :
- (a) Write down the limits prescribed by the Bureau of Indian standards for the following parameters related to drinking water quality and describe their significance: Nitrates; Total Coliforms; Cadmium; Iron; fluorides.
 - (b) What is the importance of keeping control and standard samples in BOD test?
 - (c) Compare BOD and COD tests for determination of organics.
 - (d) Pickling waste from a steel factory was mixed with sewage generated from the factory premises and the sample was tested for BOD. The results indicated a much lower value than what was expected. Comment on the possible reasons and suggest precautions to avoid such error.
 - (e) Why are coliforms used as indicator organisms in biological testing of water? Explain the routine examination carried out in laboratory for coliforms in drinking water.

- (f) What are the basic differences in the quality of water obtained from surface and underground sources?

4 Attempt any **four** parts of the following : **5×4=20**

- (a) What do you understand by land pollution? Discuss different factors affecting the land pollution.
- (b) Write a short note on recycling and recovery of materials and its impact on eco-system.
- (c) What are various components in solid waste management system for a city?
- (d) Compare aerobic and anaerobic methods of composting of municipal solid waste.
- (e) Write a short note on municipal solid waste disposal system.
- (f) Differentiate between the domestic sewage and industrial sewage with examples.

5 Attempt any **two** parts of the following : **10×2=20**

- (a) How is noise measured in the field? Describe the scale used for noise measurement. Define the terms – ambient noise, steady noise, background noise and peak noise.
- (b) “The effects of noise go far beyond our auditory system”, explain with examples.
- (c) The buildings on the side of a busy highway face a problem due to the noise created by heavy traffic. Suggest some measures that could be taken to relieve people residing in these houses of the menace of noise. The measures may include both building and road planning.