B. Tech.

(SEM. VI) EXAMINATION, 2006-07

ENVIRONMENTAL POLLUTION MONITORING & CONTROL

Time : 3 Hours] [Total Marks : 100

Note :
(i) Attempt all questions.
(ii) All questions carry equal marks.
(iii) In case of numerical problems assume data wherever not permitted.
(iv) Be precise in your answer.

1 Attempt any four parts of the following : 5×4

(a) Differentiate between EURO I, II and III. Discuss the use and importance of it.

(b) What is noise pollution and what are the effects on health of human being?

(c) Discuss the various steps required to control/ minimize noise pollution inside the industrial area?

(d) What are the instruments required to measure the noise level? Discuss any one in detail.

(e) What are the permissible limits of noise pollution? Does it vary for the urban area and industrial area? Discuss.
(f) What are sound absorbers? Explain the functioning of it. Also discuss whether trees can help to control noise pollution, if yes how?

2 Attempt any four parts of the following : 5×4
(a) What are the major toxic metals which are present in the atmosphere and what are their effects on human being?
(b) In a chemical industry how the stack height helps in reducing the pollutant concentration. Also discuss the procedure to calculate stack height.
(c) What are electrostatic precipitators? Discuss its working with neat diagram.
(d) What are the pollutants from diesel vehicle? Discuss the method for its monitoring and control.
(e) What is inversion and why normally it occurs in winter morning?
(f) What are the various methods to measure smoke density and visibility? Discuss any one in detail.

3 Attempt any four parts of the following : 5×4
(a) What are solid wastes and how it is characterized? What are the major sources of solid wastes?
(b) Landfill is the most widely used method for solid waste disposal. Justify this statement and also discuss the advantages and disadvantages of sanitary landfill.

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(c) What are incinerators? Discuss how it helps in controlling the solid wastes and what are the disadvantages of it?

(d) What are the various factors that affect ground water pollution? Discuss them.

(e) Describe the Biological oxygen demand, chemical oxygen demand and total oxygen demand.

(f) Describe the effect of excess fluoride in the ground water. How it affects the human health?

4 Attempt any **two** parts of the following : **10×2**

(a) What are the various wastes resulting from a cement industry? Discuss the various methods used in cement industry to control the pollution.

(b) What are the various methods for the removal of phenol from waste water? Describe any one in detail.

(c) What is the use of effluent treatment plant? Describe the various steps for the designing of the effluent treatment plant.

5 Attempt any **one** part of the following : **20×1**

(a) What are the various dispersion models available for control of air pollution? Describe any one in detail.

(b) Discuss the method for measuring and sampling various gases:
   (i) CO
   (ii) CO₂
   (iii) S0₂