

Total No. of Questions : 12]

SEAT No. :

P721

[Total No. of Pages : 3

[4659] - 6

B.E. (Civil Engineering) (Semester - I)

C : AIR POLLUTION & CONTROL (Elective - I)

(2008 Pattern)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answer any 3 questions from each section.*
- 2) *Answer to the two sections should be written in separate books.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.*
- 5) *Assume suitable data, if necessary.*

SECTION - I

- Q1)** a) Explain the role of meteorological parameters in the dispersion of air pollutants in the atmosphere? [9]
- b) Describe with neat sketches how different atmospheric conditions give rise to different kinds of plumes? [9]

OR

- Q2)** a) Explain the terms : [12]
- i) Temperature lapse rate
 - ii) Estimation of plume rise
 - iii) Gaussian diffusion model
 - iv) Zones of atmosphere
- b) A factory uses 2,00,000 litres of furnace oil (Specific density 0.97) per month. If for one million litres of oil used per year the particulate matter emitted is 3.0 tonnes per year, SO₂ emitted is 59.7 tonnes per year, NO₂ emitted is 7.5 tonnes per year, hydrocarbons emitted are 0.37 tonnes per year, calculate the height of the chimney required to be provided for safe dispersion of pollutants. [6]

P.T.O.

- Q3)** a) What are the objective of sampling the atmosphere & how are the sampling stations located for an air pollution survey? [8]
b) List out various methods of sampling & describe any one in detail? [8]

OR

- Q4)** a) Enumerate the various analytical methods available for monitoring air pollution? [6]
b) Describe the following methods of analyzing sample in details : [10]
i) Chemical methods
ii) Continuous recording instrumental methods

- Q5)** a) Explain briefly the various methods of odour control? [10]
b) Explain how the odour intensity is measured? [6]

OR

- Q6)** a) Define & explain indoor air pollution. What adverse effects are caused by indoor air pollution? [8]
b) Write in brief about : [8]
i) Natural & artificial ventilation of building
ii) Air conditioning of building

SECTION - II

- Q7)** a) What are the methods available to control air pollution by process changes? Illustrate with examples? [9]
b) With neat sketch explain the principal, construction & working of cyclone separator? [9]

OR

- Q8)** a) Briefly discuss the recent development in the automobile industry to reduce air pollution? [9]
b) Explain the mechanism of working of scrubbers for particulate removal? [9]

Q9) Explain about :

- a) Air act 1981 (India) [8]
- b) The Environmental protection act 1986 [8]

OR

- Q10)** a) Explain the tangible & intangible economic losses due to air pollution. [8]
- b) How air pollution control is done by zoning? What should be the criteria for zoning? [8]

- Q11)** a) Discuss the role of general public in Environmental clearance? [8]
- b) Explain the environmental impact of thermal power plants. [8]

OR

- Q12)** a) Explain the environmental impact of water resources projects? [8]
- b) Discuss the environmental rules 1999 (siting of Industries)? [8]

