

B.E. Civil Engineering Seven Semester
CE705 – ELECTIVE – I : Air Pollution and Solid Waste Management

P. Pages : 2

Time : Three Hours



GUG/W/18/1737

Max. Marks : 80

- Notes :
1. All questions carry equal marks.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Assume suitable data wherever necessary.
 4. Diagrams and Chemical equation should be given wherever necessary.
 5. Retain the construction lines.
 6. Illustrate your answers wherever necessary with the help of neat sketches.
 7. Use of slide rule, Logarithmic tables, Steam tables, Mollier's chart, Drawing instruments, Thermodynamic tables for moist air, Psychrometric charts and Refrigeration charts is permitted.
 8. Use of D. A. Law's "Pocket book for Mechanical Engineers" is permitted.

1. a) What is Air Pollution? Give the composition of various gases with its percentage in clean dry atmosphere. 8
- b) Write a note on its effect of air pollution on human health. 8

OR

2. a) Write in detail about Air Pollution Episodes. 8
- b) Explain in detail various meteorological parameters that influence Air Pollution dispersion. 8
3. a) What is Atmosphere? Explain various zones of atmosphere. 8
- b) Explain the detailed procedure for ambient Air Pollution monitoring by HVS. 8

OR

4. a) Write short notes on : 8
- i) Cyclones
- ii) Green House effect.
- b) An Industry utilizes 0.3 ML of oil fuel per month. It has also been estimated that for every 1 ML of fuel oil burnt in the industry, per year, the quantities of various pollutants emitted are given as : 8
- Particulate matter : 2.9 t/year
- $\text{SO}_2 = 60\text{t / year}$
- $\text{NO}_X = 08\text{t / year}$
- $\text{HC} = 0.4\text{t / year}$
- $\text{CO} = 0.5\text{t / year}$
- Calculate the height of the stack required to be provided for safe dispersion of the pollutant.

5. a) Give the list of control mechanism that could be used to reduce emission from Industries. 8
b) Discuss the PLUME characteristics with sketches. 8

OR

6. a) What is Scrubber? State & explain various types of scrubber used in removal of particulate from gaseous stream explain with neat sketch any one type of scrubber. 8
b) Suggest guideline to prepare environmental management plan to Control Noise Pollution. 8
7. a) Define the municipal solid waste. What are the sources of generation of municipal solid waste. 8
b) Explain determination of physical & chemical characteristics of solid waste. 8

OR

8. a) State & explain various methods of solids waste. 8
b) Explain the composting methods adopted in India. 8
9. a) What are the types of transfer station? Explain direct & indirect method of transportation. 8
b) With neat sketches, discuss the solid waste collection equipments. 8

OR

10. a) What is Sanitary landfill? Explain method of sanitary land filling. 8
b) Draw 3 – component diagram of incineration & Explain. 8
