

Code: EE6T6FE-A, EC6T6FE-B, IT6T5FE-A, ME6T6FE-A, CS6T5FE-A

**III B.Tech - II Semester – Regular/Supplementary Examinations
March 2020**

**AIR POLLUTION AND CONTROL
(COMMON FOR EEE, ECE, IT, ME & CSE)**

Duration: 3 hours

Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks

11x 2 = 22 M

1.

- a) Define primary and secondary pollutants with examples.
- b) What is photo chemical smog and in which conditions it is common?
- c) Write the influence of the inversion in the dispersion of pollutants.
- d) On particular day the average surface temperature of the earth is 15°C and at an elevation 250 m the temperature is 12.75°C. Determine the stability of the atmosphere.
- e) What are the factors that depend upon choice of collection devices for particulate emission control?
- f) Compare wet scrubbing and dry scrubbing for SO₂ removal.
- g) Give the advantages and disadvantages of cyclone separators.
- h) “Prevention is better than control.” Justify the statement by giving source correction methods.
- i) List the meteorological conditions that effect the dilution of pollutants in the atmosphere.

- j) Give the importance of iso kinetic conditions in stack sampling.
- k) List the few industries specified in the schedule under Air Act, 1981.

PART – B

Answer any *THREE* questions. All questions carry equal marks.

3 x 16 = 48 M

- 2. a) Differentiate between the following pollutants with suitable examples: 8 M
 - i) Natural and Artificial
 - ii) Point and non-point

- b) What is acid rain? What are the factors influencing the formation of acid rain? Explain its ill effects. 8 M

- 3. a) Explain wind rose with a neat sketch. 8 M

- b) Sketch the various plume phenomena and discuss each sketch in relation to dry adiabatic lapse rate. 8 M

- 4. a) Why usage of Electrostatic precipitators is limited? Give its advantages and disadvantages along with its working principles. 8 M

- b) Discuss the formation and control of NO_x in high temperature industrial operations like boilers. 8 M

5. a) Cement, Lime stone, stone crushing industries releases large quantity of particulates. Illustrate the in-plant control measures to be taken to reduce the emissions in such industries. 8 M
- b) What do you mean by dispersion of pollutants? What are the parameters required in finding the stack height? Explain the objectives of the stack. 8 M
6. a) List the five sampling techniques for particulate in ambient air. Explain any two of them in detail. 8 M
- b) What is air quality management? Explain role of air quality monitoring with respect to pollution levels in Delhi. 8 M