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10CV765

**Seventh Semester B.E. Degree Examination, Dec.2017/Jan.2018**

**Air Pollution and Control**

Time: 3 hrs.

Max. Marks:100

**Note:** Answer any FIVE full questions, selecting atleast TWO questions from each part.

**PART - A**

- 1 a. Explain the Emission inventory source classification. Give examples. (08 Marks)  
 b. A car emits CO as exhaust gas at 2% by volume. Calculate the concentration of CO in  $\mu\text{g}/\text{m}^3$  at  $0^\circ\text{C}$  and  $25^\circ\text{C}$  at 1 atmospheric pressure. (05 Marks)  
 c. Write a note on Photochemical Smog. (03 Marks)
- 2 a. Explain Air Pollutant on materials. (10 Marks)  
 b. Explain the cause for Bhopal gas tragedy. Also explain the after effects of the tragedy. (10 Marks)
- 3 a. Explain the effects of topography on pollutant dispersion. (10 Marks)  
 b. With a neat sketch, explain different types of Environmental Lapse Rate. (08 Marks)  
 c. Write the equation for Gaussian plume model for X(x, y, z). (02 Marks)
- 4 a. An anemometer measures a wind speed of 5m/s at a height of 10m above ground. Find the wind speed at a height of 150m if the change in temperature is : (05 Marks)  
 i)  $-15^\circ\text{C}/1000\text{m}$       ii)  $+5^\circ\text{C}/1000\text{m}$ .  
 b. What are the factors to be considered to select site for the construction of industry? (10 Marks)  
 c. Explain the working principle of Sound level meter. (05 Marks)

**PART - B**

- 5 a. With a neat sketch, explain method of using Ringelmann chart. (10 Marks)  
 b. Design a gravity settler to remove all the iron particulate from a dust laden gas stream with the data given as  $d_p = 35\mu\text{m}$  gas = air at ambient conditions.  $Q = 3.6\text{ m}^3/\text{s}$ ,  $\rho_p = 7.62\text{ g/cc}$ . (10 Marks)
- 6 a. Explain how particulate pollutants are measured. (10 Marks)  
 b. Explain the operational problems associated with fabric filters. (10 Marks)
- 7 a. What are Ozone holes? Explain the effects of Ozone holes. (10 Marks)  
 b. With a neat sketch, explain Box model for indoor air pollution. (10 Marks)
- 8 a. With a neat sketch, explain fixed bed unit to remove gaseous air pollutants. (10 Marks)  
 b. How Automobile Emission are Controlled? (10 Marks)

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