Code No: **RT41017** **R13** **Set No. 1**

IV B.Tech I Semester Regular/Supplementary Examinations, Oct/Nov - 2018

AIR POLLUTION AND CONTROL

(Civil Engineering)

Time: 3 hours **Max. Marks: 70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any THREE questions from Part-B

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PART–A *(22 Marks)*

1. a) What is Indoor air pollution? [3]
   b) Differentiate Fog and smog. [4]
   c) What are wet scrubbers? [4]
   d) What is dry adiabatic lapse rate? [3]
   e) List the factors to be considered while selecting a particular technology for air pollution control. [4]
   f) Differentiate between physical and chemical adsorption. [4]

PART–B *(3x16 = 48 Marks)*

2. a) What do you mean by pollution? Distinguish between primary pollutants and secondary pollutants. [8]
   b) Write about the pollutants from mobile sources. [8]

3. a) What do you mean by Green house effect? What are the substances responsible for that? Explain the remedial measures for mitigation. [8]
   b) What are the primary meteorological factors that influence air pollution? [8]

4. a) Define Air Pollution. Discuss the sources and classification of air pollution. [8]
   b) What are the Primary air pollutants and secondary air pollutants? Explain the formation of secondary air pollutants. [8]

5. a) What is Photochemical smog? How it forms? Explain. [8]
   b) Define and explain the term sampling? Explain the sampling methods of air pollutants. [8]

6. a) With a neat sketch explain the principle of working of an Electrostatic Precipitator. [8]
   b) A power plant burns 5.45 tons of coal per hour and discharging the combustion production through a stack at an effective height of 75m. The coal has a sulfur content of 4.2% and the wind velocity is 4 m/s on a hot summer day at an height of 10m. Estimate the Ground level concentration of sulfur dioxide in $\mu g/m^3$ (i) along the centre line at a distance of 1.5 Km from the stack (ii) at cross wind distance 50m from the downwind distance 1.5Km.
   Take $\sigma_y = 36m$, $\sigma_z = 36m$, $\alpha = 0.25$ [8]

7. a) Explain about the environmental criteria for setting industries and green belts. [8]
   b) Describe the laboratory analysis of Sulphur-di-oxide, Nitrogen oxide and carbon monoxide [8]