Code No: NR410107 **NR**

IV B.Tech I Semester Supplementary Examinations, November 2006
AIR POLLUTION AND CONTROL
(Civil Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Convert 0.2 ppm (vol) NO and 0.15 ppm (vol)NO_2 to μg /m^3 nitrogen oxides (NO_x) at 25^0 c and 760 mm Hg.
   (b) Covert 0.35 ppm (vol) NO_x to μg /m^3 at 25^0 c and 760 mm Hg. [8+8]

2. (a) What is dose response curve? How do we establish the dose response curve for a pollutant?
   (b) Discuss in detail the harmful effects of air pollutants on materials. [8+8]

3. (a) Explain ASARCO process along with a neat sketch ?
   (b) Discuss an overview of the sulphur problem? [8+8]

4. (a) Air quality standard for nitrogen dioxide (NO_2) is 470 Mg/m^3 (at a temperature of 30^{o}C and (1 at m of pressure) Express the concentration in PPM.
   (b) Write a note on ventilation co-efficient and explain how the same is used as an indicator of the atmosphere dispersive capability.
   (c) Explain briefly the effect of variations in key parameters on SO_2 plume. [6+6+4]

5. How the topography of an area is going to affect the pollutant dispersion? [16]

6. (a) What ate the different methods used to reduce the concentration of Oxides of Nitrogen? Explain in brief.
   (b) For the reaction $\frac{1}{2}$ N_2 + $\frac{1}{2}$ O_2 NO the equilibrium compositions of NO and O_2 at 4000K and 1 atm. Pressure are 1,00,000 PPM and 1,50,000 respectively. What is the value of equilibrium constant K. [10+6]

7. (a) With a neat sketch describe a 'Fabric Filter'.
   (b) State the common 'Fabrics' used in Bag Filters stating their relative merits. [8+8]

8. How do you monitor SPM concentration of the atmosphere when it is of
   (a) low intensity
   (b) high intensity. [16]

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