

Dr. Kajiv

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST 1 EXAMINATION (February- 2016)
M. Tech. (II- SEM.)

COURSE CODE: 14M31CE211

MAX. MARKS: 15

COURSE NAME: Air and Noise Pollution Control

COURSE CREDIT: 3

MAX. TIME: 1 HR

Note: Attempt all Questions. Carrying of mobile phones during exams will be treated as case of unfair means. Assume suitable data if required.

1. Estimate the quantity of carbon in atmosphere corresponding to a concentration of 2.0 ppm_v of CO₂. Assume that total mass of air is 5.25×10^{21} g. The density of air at 0°C and 1 atmospheric pressure is 1.30 kg/ m³ **(3)**
2. Determine the saturation value of HbCO in the blood if the air breathed in contains 125 ppm_v of CO concentration. For the same condition as above, determine the % HbCO in the blood if the person is exposed for 1.5 hours and is working under sedentary conditions. How much exposure time is required to reach equilibrium levels of HbCO ? Assume M = 210 **(1+2+2)**
3. Mentioning any suitable assumptions, derive an expression for variation of pressure with height for atmosphere at rest conditions. In this context, mention the general expression between temperature, pressure and height and explain the different terms of the equation **(2+2)**
4. Discuss the process of Ascent and Descent of Non-saturated air and derive an expression for the same. **(3)**