JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST I1 EXAMINATION (June- 2016)
M. Tech. (II- SEM.)

COURSE CODE: 14M31CE211   MAX. MARKS: 35

COURSE NAME: Air and Noise Pollution Control

COURSE CREDIT: 3   MAX. TIME: 2 HRS

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

1. With neat diagrammatic sketches and detailed expressions explain the following type of dispersion models (a) line source model, (b) box models and (c) area source models. **(10)**

2. An industrial gas rate release was found to be 100 g/s from a stack with an effective height of 50m. The wind speed at stack height is 5m/s and assume atmospheric stability class is D type ($\sigma_y = 36$m and $\sigma_x = 20$m). Determine (a) ground level concentration along centre line at a distance of 500m from stack, (b) crosswind concentration at 100m from the center line for downward distance of 500m **(4)**

3. The heat emission rate associated with stack gas is 500kJ/s and the wind and stack gas speeds are 7 and 25m/s respectively with inside stack diameter at top being 2.5m. Estimate the plume rise using (a) Moses and Carsons general formulae (b) Holland formulae and (c) Concawe formula. Assume neutral stability class. Explain the results. **(2+2+2)**

4. In the context of noise pollution measurements, explain with appropriate mathematical formulations (a) sound power levels, (b) sound intensity levels and (c) sound pressure level. **(3)**

5. With a neat sketch explain the working of the Sound Level Meter (SLM) **(2)**

6. The noise levels recorded at a place is during morning afternoon and nighttimes were 85db, 60db and 72db respectively. Determine the average noise levels at the location. **(2)**

7. With neat sketches and figures where appropriate, write short notes on (a) Global Energy Heat Balance (b) Plume Type 'Coning' (c) Advantages and Disadvantages of Electrostatic Precipitators (ESP) and (d) isokinetic sampling. **(8)**