Code: 9A01706 **R09**

B.Tech IV Year I Semester (R09) Regular & Supplementary Examinations December 2014

AIR POLLUTION AND CONTROL

(Civil Engineering)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1 (a) Classify air pollutants into different categories, indicating their sources.
(b) Write short notes on:
(i) Aerosols.
(ii) Smog.

2 (a) Write short note on harmful effects of air pollution on:
(i) Vegetation.
(ii) Materials.
(b) Discuss on global warming and its effects.

3 With neat sketch, discuss in detail on the atmospheric stability.

4 (a) Briefly explain the role of meteorological elements in the dispersion of air pollutants in the atmosphere.
(b) Explain the terms:
(i) Environmental lapse rate.
(ii) Adiabatic lapse rate.

5 Describe with neat sketches, how different atmospheric conditions give rise to different kinds of plums.

6 (a) Describe with neat sketch, the principle and working of cyclone separators used for removal of air pollutants. Also, list out its merits and demerits.
(b) Calculate the settling velocity of a particle settling by gravity in a gas stream. Assume the following information:
$\rho_p = 0.899\ g/cm^3$
$\rho = 0.0012\ g/cm^3$
Viscosity of air $= 1.82 \times 10^{-4}\ g/cm.s$
Diameter of the particle = 45 µm.

7 Mention the common methods of control of gaseous contaminants and describe any one of them in detail.

8 (a) Elucidate briefly the national ambient air quality standards.
(b) What are the devices used for sampling gases and vapor? Describe any one in detail.

*****