CBCS Scheme

USN | 1 | A | Y | 1 | 5 | C | V | 1 | 1 | 3 | 15CV/CT551

Fifth Semester B.E. Degree Examination, Dec.2017/Jan.2018
Air Pollution and Control

Time: 3 hrs. Max. Marks: 80

Note: *Answer FIVE full questions, choosing one full question from each module.*

Module-1

1 a. Define Air Pollution. Explain Primary and Secondary air pollutants. **(08 Marks)**

b. With respect to Air pollution, explain air borne contaminants. **(08 Marks)**

OR

2 a. Enumerate the effects of Air pollution on Human Health and Vegetation. **(08 Marks)**

b. Define Inversion. Briefly explain the different types of inversion with the aid of neat sketches. **(08 Marks)**

Module-2

3 a. Explain the structure and the companion of atmosphere. **(08 Marks)**

b. Define Lapse rate. Explain the different types of lapse rate. **(08 Marks)**

OR

4 a. What are the assumptions and limitations of the Gaussian Plume dispersion model? **(08 Marks)**

b. A Thermal power plant releases SO_2 at a rate of 138.8 g/s. The stack height is 120m. While the temperature of the stack gas is 150^0C and the ambient air temperature is 35^0C. The wind velocity at the stack height is 8.5m/s. While the stack gas velocity is 10m/s. The stack diameter is 3.5m. The atmospheric pressure is 1.005 bar. Estimate the effective stack height. **(08 Marks)**

Module-3

5 a. What is meant by Air sampling? Explain briefly sampling train. **(08 Marks)**

b. With eh help of the neat sketch, explain the measurement of SPM in ambient air. **(08 Marks)**

OR

6 a. With the help of neat sketch, explain high volume air sampler for measurement of particulate matter. **(08 Marks)**

b. Briefly explain any one method of measuring SO_2 in the stack. **(08 Marks)**

Module-4

7 a. Explain the factors affecting the selection of the particulate air control devices. **(08 Marks)**

b. Briefly explain the particulate matter removal by gravity Sattler, with the help of neat sketch. **(08 Marks)**

OR

8 a. With the help of neat sketch, explain the working principle of Electro Static Precipitation. **(08 Marks)**

b. A cement plant was emitting flue gas at the rate of 20,000 m^3/h. Assuming inlet gas velocities of 2m/s. Design a tubular ESP with 0.20m diameter with 7 cylinders to achieve the efficiency of 90% and 95%. **(08 Marks)**

Module-5

9 a. Explain briefly the emission of the gasoline driven vehicles and diesel driven vehicles. **(08 Marks)**

b. Define Noise Pollution. Explain the sources and control methods of Noise - Pollution. **(08 Marks)**

OR

10 Write short notes on any Four of the following :

a. Acid rain and its effects.
b. Bhopal gas tragedy.
c. Air quality standards.
d. Noise Pollution standards.
e. Environmental policy.
f. Kyoto protocol. **(16 Marks)**

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