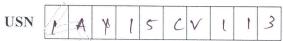
GBGS Scheme



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

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 SO₂ at a rate of 138.8 g/s. The stack height is 120m. While the temperature of the stack gas is 150°C and the ambient air temperature is 35°C. 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 SO₂ in the stack.

(08 Marks)

Module-4

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 m³/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)