

GUJARAT TECHNOLOGICAL UNIVERSITY**BE SEM-VIII Examination May 2012****Subject code: 180608****Subject Name: Air Pollution Control****Date: 08/05/2012****Time: 10.30 am – 01.00 pm****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks. **Total Marks: 70**

Q.1 (a) Describe various geometric forms of plumes as per atmospheric stability; also discuss pollution potential of each form. **07**

(b) Classify air pollutants into different categories indicating their sources. **07**

Q.2 (a) State the phenomena of Green house effect. State its implications and control measures. **07**

(b) Discuss “London smog episode” and “Meuse Valley Disaster”. **07**

OR

(b) Determine the effective height of stack with the following data: **07**

Physical height of stack = 160m

Inside diameter of stack at exit = 0.85 m

Wind velocity = 2.75 m/sec

Air temperature = 20⁰ C

Atmospheric pressure = 1000 mill bars

Stack exit velocity = 11.00 m/sec

Stack gas temperature = 150⁰ C

Q.3 (a) Explain the role of meteorological elements in the dispersion of air pollutants in the atmosphere. **07**

(b) Explain the following terms with their significance in air pollution. **07**

(I) Effective stack height

(II) Wind rose diagram

OR

Q.3 (a) Discuss the ill effects of air pollution on plants & vegetation. **07**

(b) Explain Radiation-Energy balance for solar radiations and mention the processes responsible for heating of troposphere. **07**

Q.4 (a) Discuss the effects of air pollution on property. **07**

(b) Mention effect of air-fuel ratio on pollutant concentration. **07**

OR

Q.4 (a) State the objectives of ambient air sampling. Enumerate all the methods of particulate sampling and describe any one. **07**

(b) Discuss “Substitution of raw material” or “Fuel and process change” as method of control of air pollution at source. **07**

Q.5 (a) Write short note on “Fabric filter”. **07**

(b) Describe “Adsorption and Absorption” as a method for sampling of gaseous pollutants. **07**

OR

Q.5 (a) Write short note on “Gravity Settling Chamber”. **07**

(b) Write short note on “Legislation for control of air pollution and automobile pollution. **07**
