

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- Vth SEMESTER-EXAMINATION – MAY/JUNE - 2012

Subject code: 151305

Date: 07/06/2012

Subject Name: Air Pollution & Control

Time: 02:30 pm – 05:00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q1 (a) what are the Greenhouse Gases? Explain the Phenomenon of melting ice & its effect on earth. (7)

(b) What are the types and sources of particulate matter causing the air pollution? Briefly explain them. (7)

Q2 (a) Explain the Air Pollution episodes held between the year 1930 to 1984. (7)

(b) Describe with neat sketches how different atmospheric conditions give rise to different kinds of plumes. (7)

OR

(b) Write explanatory notes on (7)

(A) Dispersion Models

(B) Heat Island Effects

Q3 (a) A factory uses 2, 00,000 liters of furnace oil (Specific density 0.97) per month if for one million liters of oil used per year, the particulate matter emitted is 3.0 tones per year, SO₂ emitted is 59.7 tones per year, NO_x emitted is 7.5 tones per year, hydrocarbon emitted are 0.37 tones per year and carbon monoxide emitted is 0.52 tones per year. Calculate the height of the chimney required to be provided for safe dispersion of the pollutants. (7)

(b) Explain the following atmospheric condition: (7)

(A) Super-adiabatic

(B) Sub-adiabatic

OR

Q3 (a) what is 'Dry Adiabatic lapse rate' and the 'Environmental lapse rate'?. Plot and Explain. (7)

- (b) What are the symptoms of acute and chronic poisoning by the
Following pollutants on farm animals? (7)
- (A) Fluorine
 - (B) Arsenic
 - (C) Lead

- Q4** (a) Explain the formation of Photochemical Smog? (7)
- (b) Write Short Notes on (7)
- (A) Exhaust emissions
 - (B) Crank-case emissions

OR

- Q4** (a) Explain A/F Ratio in detail. (7)
- (b) Mention common methods of control of Gaseous Contaminants (7)
- And describe any one of them in detail.

- Q5** (a) Define Odour. Explain briefly the various methods of odour (7)
- Control.
- (b) With a neat sketch, explain the Principal, constructions and (7)
- Working of a Gravity Settling Chamber.

OR

- Q5** (A) What is Noise Pollution? Describe sources, effects and control (7)
- Of the same.
- (B) What are the advantages and disadvantages of Electrostatic (7)
- Precipitator?