Seat No.: _____ Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**BE - SEMESTER–VI (NEW) - EXAMINATION – SUMMER 2016**

**Subject Code:2161302** **Date:06/05/2016**

**Subject Name: Fundamentals of Air Pollution**

**Time: 10:30 AM to 01:00 PM** **Total Marks: 70**

**Instructions:**

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

| | | | |
|---|---|---|---|
| **Q.1** | **(a)** | Define the following terms:<br>(i) Air Pollution (ii) Aerosol (iii) Water vapor (iv) Smoke (v) Mist<br>(vi) Fog (vii) Soot | 07 |
| | **(b)** | Which parameters are include in Ambient air quality standards also Indicate their units. | 07 |
| **Q.2** | **(a)** | Explain wind rose diagram with example, enlist its application. | 07 |
| | **(b)** | What is lapse rate? Derived the lapse rate. | 07 |
| | | **OR** | |
| | **(b)** | What is MMD? Discuss in detail | 07 |
| **Q.3** | **(a)** | Describe the Classification of dispersion of plume behavior. | 07 |
| | **(b)** | Discuss the effects of Sulphur dioxide on human health, materials and vegetation | 07 |
| | | **OR** | |
| **Q.3** | **(a)** | Write down factors affecting Meteorological condition? | 07 |
| | **(b)** | Discuss the effects of Nitrogen oxides on human health, materials and vegetation | 07 |
| **Q.4** | **(a)** | What are the methods of collecting gaseous samples from a stack? Describe any one with net sketch. | 07 |
| | **(b)** | Write a short note on Heat Island Effect | 07 |
| | | **OR** | |
| **Q.4** | **(a)** | Write note on Iso-Kinetic Condition. | 07 |
| | **(b)** | Write explanatory note on stack sampling techniques. | 07 |
| **Q.5** | **(a)** | What are the sources of odour? Discuss control measures. | 07 |
| | **(b)** | An industry utilizes 0.3 ML of oil fuel per month. It has also been estimated that for every 1 ML of fuel oil burnt in the factory, per year, the quantities of various pollutants emitted are given as:<br>PM= 2.9 t/yr<br>SO2= 60 t/yr<br>NOX=8 t/yr<br>HC= 0.4 t/yr<br>CO= 0.5 t/yr<br>Calculate the height of chimney required to be provided for safe dispersion of the pollutants. | 07 |
| | | **OR** | |
| **Q.5** | **(a)** | What is Noise? What are its effects on Humans? | 07 |
| | **(b)** | Write short note on High Volume Air Sampler. | 07 |