

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2018**

**Subject Code: 2171302**

**Date: 15/11/2018**

**Subject Name: Air Pollution Control and Management**

**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 A/F ratio. Explain Rich mixture & Lean mixture. **03**  
 (b) Enlist various Particulate removal mechanisms & explain any one in detail. **04**  
 (c) Draw neat sketch of Cyclone separator. Label & explain importance of each components of it. **07**
- Q.2** (a) List various factors affecting efficiency of Cyclone separator. **03**  
 (b) Discuss advantages & disadvantages of Venturi Scrubber. **04**  
 (c) Define “Air – to – Cloth Ratio” & explain Pulse Jet type bag filter with neat **07**
- OR**
- (c) Explain step by step working of Electrostatic Precipitator (ESP) with figure. **07**
- Q.3** (a) Write down various sources of Automobile Emissions. **03**  
 (b) Draw Air Pollution Control scheme for Foundry Industry in order to achieve stack standards give by controlling authority. **04**  
 (c) Write a short note on Stratified Engine. **07**
- OR**
- Q.3** (a) Identify sources & types of air pollutants in Cement industry. **03**  
 (b) Give difference between Two Stroke & Four Stroke engines. **04**  
 (c) Write a short note on Automobile emission reduction by “ Engine Modification” **07**
- Q.4** (a) Write down the significance for NO<sub>x</sub> control. **03**  
 (b) Give difference between Wet & Dry process of SO<sub>x</sub> control methods. **04**  
 (c) Identify sources, types of air pollutants & suggest air pollution control system in order to achieve standards Fertilizer Industry. **07**
- OR**
- Q.4** (a) Explain the SO<sub>x</sub> formation mechanism. **03**  
 (b) Classify various control methods of NO<sub>x</sub>. **04**  
 (c) Identify sources, types of air pollutants & suggest air pollution control system in order to achieve standards in Thermal Power Plant. **07**
- Q.5** (a) Define VOC. Enlist control techniques of VOC. **03**  
 (b) Discuss ambient air quality standards & stack standards. **04**  
 (c) Explain the magnesium oxide process for control of Sulfur dioxide with its reaction chemistry. **07**
- OR**
- Q.5** (a) Discuss the roles of oxides of nitrogen in photo oxidation” **03**  
 (b) Define “Air Quality Index” & explain its applications. **04**  
 (c) What is catalytic reduction? Explain SNCR with the help of diagram and reaction chemistry **07**

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