

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – I • EXAMINATION – WINTER • 2013

Subject code: 711108N**Date: 06-01-2014****Subject Name: Combustion Engineering****Time: 10.30 am – 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.
4. Draw neat sketch wherever required.

- Q.1** (a) Explain stages of combustion with help of P – θ diagram for compression ignition engines. **07**
(b) Explain “Knocking in C.I. engines.” **07**
- Q.2** (a) State and explain various methods to reduce knocking tendency of C.I. engines. **07**
(b) State what are the requirements of good combustion chamber. **07**
OR
(b) Draw various types of nozzles of C.I. engines. **07**
- Q.3** (a) Classify various types of gaseous fuels. **07**
(b) Classify fluidized Bed Combustion and explain any one. **07**
OR
- Q.3** (a) Explain with neat sketch pre-combustion chamber. **07**
(b) With neat sketch explain Battery Ignition System and state its limitations. **07**
- Q.4** (a) State effect of Ignition advance angle on performance of S.I. engine. **07**
(b) Explain various methods used to burn pulverized fuel. **07**
OR
- Q.4** (a) Explain “Adiabatic Flame Temperature.” **07**
(b) Explain effect of excess air variation on combustion of solid fuels. **07**
- Q.5** (a) “Cyclone Burner” Explain with neat sketch. **07**
(b) Differentiate between Proximate Analysis and Ultimate Analysis of coal. **07**
OR
- Q.5** (a) Explain difference between Higher Calorific Value and Lower Calorific Value of fuel. **07**
(b) Describe the procedure to determine calorific value of fuel with the help of Bomb Calorimeter. **07**
