

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – I • EXAMINATION – WINTER 2012****Subject code: 711108N****Date: 16-01-2013****Subject Name: Combustion Engineering****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.

- Q.1** (a) Explain general conditions necessary for combustion. **07**
(b) Explain stages of Combustion on P – θ diagram for S.I. engine. **07**
- Q.2** (a) Discuss factors affecting delay period in S. I. Engine. **07**
(b) Explain abnormal combustion in Spark Ignited Engine. **07**
- OR**
- (b) Compare Detonation in S.I. Engine and knocking in C.I. engine. **07**
- Q.3** (a) Discuss factors affecting combustion chamber design. **07**
(b) State various methods to provide air motion inside cylinder. **07**
- OR**
- Q.3** (a) Explain Chain reactions. **07**
(b) Give classification of liquid fuels for I.C. engines. **07**
- Q.4** (a) “Best Diesel Fuel is most Poor Petrol Fuel” Explain. **07**
(b) Discuss pollution of environment due to Diesel Engine operation. **07**
- OR**
- Q.4** (a) Explain Adiabatic Flame Temperature. **07**
(b) Classify atomizer on the basis of various parameters. **07**
- Q.5** (a) Define flame front and explain propagation of flame front. **07**
(b) Explain, how to minimize or control knocking. **07**
- OR**
- Q.5** (a) Compare combustion phenomenon for solid, liquid and gaseous fuel. **07**
(b) Explain stoichiometric Air-Fuel ratio, state the effect of Excess air on combustion. **07**
