

Seat No.: _____

Enrolment

No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2014

Subject code: 1721105

Date: 23-06-2014

Subject Name: High Speed Diesel Engine

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) Why actual cycle efficiency is much lower than air standard efficiency? **07**
(b) What is delay period? State and explain the factors affecting the delay period in CI engine combustion. **07**
- Q.2** (a) State and explain different types of open combustion chambers for CI engine. **07**
(b) Discuss Induction swirl, compression swirl and combustion swirl. **07**
- OR**
- (b) Explain Air-cell combustion chamber with fig. Give its merits and demerits. **07**
- Q.3** (a) Explain the phenomenon of spray formation in HSDE. **07**
(b) State and explain various types of nozzles used in HSDE with fig. **07**
- OR**
- Q.3** (a) Explain quantity of fuel injected and size of nozzle orifice in HSDE. **07**
(b) Explain distributor type fuel-injection pump with fig. **07**
- Q.4** (a) Explain necessity and limitations of supercharging in HSDE. **07**
(b) Explain various methods of turbo charging. **07**
- OR**
- Q.4** (a) What is pilot injection? Discuss its suitability for various engines. **07**
(b) Explain special features of agricultural and industrial engines. **07**
- Q.5** (a) Write short note on multi fuel engines. **07**
(b) Explain the process of piston cooling in HSDE **07**
- OR**
- Q.5** (a) Write short note on latest combustion chambers. **07**
(b) Explain common rail direct injection technique used in HSDE. **07**
