

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – WINTER • 2013****Subject code: 1721105****Date: 02-01-2014****Subject Name: High Speed Diesel Engine****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.

- Q.1** (a) Give Comparison of Induction swirl, compression swirl, and combustion swirl? **07**
- (b) Explain in detail compression ratio for direct injection and indirect injection combustion chamber? Also compare direct injection and indirect injection engine? **07**
- Q.2** (a) Explain controlled and uncontrolled combustion in HSDE? **07**
- (b) Give limitation of super charging in case of HSDE and advantages of the same for HSDE? **07**
- OR**
- (b) VCR engine reduced level of emission, justify this statement? **07**
- Q.3** (a) What do you mean by turbocharging, Explain in detail? **07**
- (b) Explain TDI and TDCi Engine? Give Difference between it? **07**
- OR**
- Q.3** (a) Explain term maintenance of HSDE? **07**
- (b) Give Explanation of deviation of actual cycle from air standard cycle? **07**
- Q.4** (a) List types of injection nozzle? Explain any one of them with diagram? **07**
- (b) Write short notes on M-combustion chamber? **07**
- OR**
- Q.4** (a) Describe fuel injector with neat sketch? Can we use this injector for slight more or less pressure range and how it can be set ? **07**
- (b) Write short notes on Latest combustion chamber? **07**
- Q.5** (a) Discuss various performance parameters for HSDE? **07**
- (b) Write short notes on multi-fuel engines? **07**
- OR**
- Q.5** (a) Discus special feature of agriculture and industrial engines? **07**
- (b) Write short notes on combustion chamber requirements? **07**
