

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

## GUJARAT TECHNOLOGICAL UNIVERSITY

M.E –II<sup>st</sup> SEMESTER–EXAMINATION – JULY- 2012

**Subject code: 1721105**

**Date: 12/07/2012**

**Subject Name: High speed Diesel Engine**

**Time: 10:30 am – 13:00 pm**

**Total Marks: 70**

### Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

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|-----|-----|--|----|
| Q.1 | (a) | Discuss compression ratio for DI and IDI Engine? Compare DI and IDI Engine?  | 07 |
|     | (b) | Explain various stage of combustion for HSDE?  | 07 |
| Q.2 | (a) | Discuss Induction swirl, compression swirl, and combustion swirl?  | 07 |
|     | (b) | Explains relation between swirl ratio and fuel consumption with help of diagram? Also explain Why glowing device use?                      | 07 |
|     |     | OR   |    |
|     | (b) | Explain latest Development in combustion chamber?  | 07 |
| Q.3 | (a) | Enlist types of injection nozzle? Explain any one of them with neat sketch   | 07 |
|     | (b) | Explain combustion phenomenon in HSDE?   | 07 |
|     |     | OR   |    |
| Q.3 | (a) | Write short notes on M- Combustion chamber?  | 07 |
|     | (b) | Explain Distributor pumps in detail?   | 07 |
| Q.4 | (a) | Explain limitation of super charging in case of HSDE and advantages of the super charging for HSDE?  | 07 |
|     | (b) | What do you mean by Turbocharging? Explain its principal? Why turbo charger with intercooler is used? Give exact location of inter cooler? | 07 |
|     |     | OR   |    |
| Q.4 | (a) | Emission omitted by Variable compression ratio is law, Give supporting reasons?  | 07 |
|     | (b) | Explain Effect of time losses on P-V diagram?  | 07 |
| Q.5 | (a) | Explain special features of agricultural and industrial Engine?  | 07 |
|     | (b) | Write short notes on multi fuel engine?  | 07 |
|     |     | OR   |    |
| Q.5 | (a) | Discuss four valve engine and OHC engine in short?   | 07 |
|     | (b) | Explain MPFI technology?   | 07 |

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