Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME- SEMESTER II– EXAMINATION – SUMMER 2015

Subject Code: 2721105 **Date:01/06/ 2015**

Subject Name: High Speed Diesel Engine

Time: 2:30 PM – 5:00 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)**	Requirement for a good combustion chamber	**07**
	(b)	What do you mean by variable specific heat? Explain the effect of variable specific heat on P-V diagram of a Diesel cycle.	**07**
Q.2	**(a)**	Discuss different methods of supercharging used in practice. List merit & demerits of each method.	**07**
	(b)	Define Turbo Charging. What are the different methods of Turbo- charging?	**07**
		OR	
	(b)	Why Supercharging is more preferred in CI engine than SI engine?	**07**
Q.3	**(a)**	Explain delay period in diesel engine combustion and factors to reduced delay period.	**07**
	(b)	Write short note working of pre- combustion chamber with diagram.	**07**
		OR	
Q.3	**(a)**	Discuss compression ratio for DI & IDI engine. Compare DI & IDI engine.	**07**
	(b)	Emission omitted by variable compression ratio is low, give supporting reasons?	**07**
Q.4	**(a)**	Define delay period & factors affecting delay period.	**07**
	(b)	What is difference between air motion generated in SI and CI engine? Explain different method of generating air swirl in CI engine	**07**
		OR	
Q.4	**(a)**	List latest development in combustion chambers. Explain energy cell combustion chamber.	**07**
	(b)	Explain working of multi fuel engine. State significance of pilot fuel injection.	**07**
Q.5	**(a)**	Function of nozzle in CI engine. Enlist different types of nozzle with neat sketch.	**07**
	(b)	Assumption made in Air standard cycle. Explain dissociation phenomenon for IC Engine.	**07**
		OR	
Q.5	**(a)**	Explain four valve engine & OHC engine in short.	**07**
	(b)	Explain special features of agricultural & industrial engine.	**07**

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