Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER II– EXAMINATION – WINTER - 2016

Subject Code: 2721109 **Date: 18/11/ 2016**

Subject Name: Fundamentals of I.C.Engine and Automobile

Time: 2:30 pm to 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)**	Explain construction and purpose served by following piston design. (1) Of set piston (2) Oil cooled piston (3) Anodized piston	**07**
	(b)	State function of vibration damper in automobile. Explain hydraulic damping with neat sketch.	**07**
Q.2	**(a)**	Derive an expression to calculate air/ fuel ratio for simple carburetor, neglect the compressibility of air.	**07**
	(b)	Discuss micro processor and micro computer applications in Automobiles.	**07**
		OR	
	(b)	State and explain the factors responsible for change in valve timing in actual cycle as compared to ideal cycle.	**07**
Q.3	**(a)**	Explain various phases of spray formation from nozzle.	**07**
	(b)	Explain various types of nozzles used in CI engine with figure.	**07**
		OR	
Q.3	**(a)**	Explain working of stratified charged engine.	**07**
	(b)	Explain Distributor type pump for CI engine.	**07**
Q.4	**(a)**	Explain VVT technology in IC engine?	**07**
	(b)	Explain CRDI system.	**07**
		OR	
Q.4	**(a)**	Explain the concept and working of cam-less engine.	**07**
	(b)	Explain the concept of multipoint fuel injection system.	**07**
Q.5	**(a)**	Explain working principle of synchromesh gear box.	**07**
	(b)	Classify various steering systems. Explain with diagram the working of rack and pinion steering system.	**07**
		OR	
Q.5	**(a)**	Write short notes on (i) Tube tyre (ii) Tubeless tyres.	**07**
	(b)	With the help of neat sketch, explain construction of crankshaft. Explain the types of crankshaft.	**07**

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