Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV(New) • EXAMINATION – WINTER 2016

Subject Code:2140203 **Date:24/11/2016**

Subject Name:Automobile Engines

Time:02:30 PM to 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.**

			MARKS
Q.1		**Short Questions**	**14**
	1	What do you understand by Supercharging?	
	2	Which additional valve is required in Pressurized water cooling?	
	3	What do you understand by Indicator Diagram?	
	4	Which compound is arbitrarily assigned an Octane number of zero?	
	5	Define – Specific fuel consumption.	
	6	Define – Flash point of lubricating oil.	
	7	Explain the term Motoring Curve.	
	8	What does the Mechanical efficiency indicate?	
	9	Pulse Convertor Turbocharging is a combination of which Turbocharging methods?	
	10	Which cooling method utilizes high latent heat of vaporization of water to obtain cooling with minimum water?	
	11	In which type of scavenging there is straight flow of air and exhaust gases?	
	12	State the function of flywheel.	
	13	Explain the term – Updraft carburetor.	
	14	In Distributor injection system, the amount of fuel entering the cylinders is regulated by which mechanism?	
Q.2	**(a)**	State the advantages and disadvantages of Cross scavenging.	**03**
	(b)	Explain actual valve timing diagram for 4-stroke Gasoline engine.	**04**
	(c)	Explain the working principle of a simple carburetor with a neat sketch.	**07**
		OR	
	(c)	Explain common rail diesel injection system (CRDI) with neat sketch.	**07**
Q.3	**(a)**	What are the purposes of supercharging the I.C. Engine?	**03**
	(b)	Explain the dry sump lubrication system with neat sketch.	**04**
	(c)	Enlist different methods of Turbo-charging and explain Pulse turbo charging method.	**07**
		OR	
Q.3	**(a)**	Explain with a neat sketch, Multi hole Nozzle used in C.I. Engines.	**03**
	(b)	Describe measurement of Air consumption with neat sketch.	**04**
	(c)	Explain the combustion phenomena in S.I engine With	**07**

		Pressure Vs crank angle diagram.	
Q.4	**(a)**	State the applications of 2-stroke engines.	**03**
	(b)	Explain the working of Turbo charger.	**04**
	(c)	Discuss Heat Balance Sheet for Four stroke C.I. engine.	**07**
		OR	
Q.4	**(a)**	Explain the following terms in brief: (a) Specific fuel consumption (b) Compression ratio (c) Volumetric efficiency	**03**
	(b)	Explain limitations of a single jet carburetor.	**04**
	(c)	Explain working of 4-stroke diesel engine using P-V diagram with neat sketch.	**07**
Q.5	**(a)**	Explain Morse test for multi-cylinder engines.	**03**
	(b)	Discuss the important properties of S I engine fuel.	**04**
	(c)	Explain the factors affecting delay period in C.I engines.	**07**
		OR	
Q.5	**(a)**	Explain Air cooling system for engines.	**03**
	(b)	Explain with a neat sketch, the Roots blower supercharger.	**04**
	(c)	Explain with a neat sketch, MPFI system.	**07**

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