

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– IV (New) EXAMINATION – WINTER 2019

**Subject Code: 2140203**

**Date: 16/12/2019**

**Subject Name: Automobile Engines**

**Time: 10:30 AM TO 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.

		MARKS
Q.1	(a) Classify the internal combustion engine according to cylinder arrangements, types of ignition and number of stroke.	03
	(b) What are the desired properties of a good lubricant?	04
	(c) Explain with neat sketch, the working of 4-stroke Diesel engine. Also draw its P-V diagram.	07
Q.2	(a) List the various Diesel injection systems used in C.I. engine.	03
	(b) Differentiate between 2-stroke engines and 4-stroke engines.	04
	(c) Explain stages of combustion in S.I. engine with diagram.	07
	<b>OR</b>	
	(c) Explain briefly with neat sketch, different types of nozzle and fuel spray patterns.	07
Q.3	(a) Explain limitations of a Single jet carburetor.	03
	(b) Explain with neat sketch, the working of “M” combustion chamber.	04
	(c) Write short note on Antifreeze solutions.	07
	<b>OR</b>	
Q.3	(a) Classify the combustion chambers for C.I. engine.	03
	(b) Explain factors affecting flame propagation in S.I. Engine.	04
	(c) Describe working of Thermo-Syphon cooling system with neat sketch.	07
Q.4	(a) Explain the terms – Rich mixture and Lean mixture.	03
	(b) The supercharging is more preferred in C.I. engine than S.I. engine. Discuss it.	04
	(c) Explain construction and working of Fuel Injector with neat sketch.	07
	<b>OR</b>	
Q.4	(a) Explain the terms – Research Octane Number and Motor Octane Number.	03
	(b) Discuss Heat balance sheet for four stroke C.I. engine.	04
	(c) What is MPFI system? Explain any one type with neat sketch.	07
Q.5	(a) Define Turbo charging. Enlist methods of Turbo charging.	03
	(b) Explain Abnormal combustion in S.I. engine.	04
	(c) Enlist types of engine scavenging and explain any one of them with a neat sketch.	07
	<b>OR</b>	
Q.5	(a) What are the functions of a lubrication system?	03
	(b) Discuss the important properties of S I engine fuel.	04
	(c) Enlist various methods used for measurement of Indicated power. Explain Morse test for multi-cylinder engines.	07

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