

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV(NEW) – EXAMINATION – SUMMER 2019****Subject Code: 2140203****Date:25/05/2019****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	(a) Compare I.C. Engine and E.C. Engine	03
	(b) State reason for early opening of exhaust valve and late closing of inlet valve in 4-stroke Engine.	04
	(c) Draw & explain actual valve timing diagram for 4-stroke petrol engine.	07
Q.2	(a) Define following terms (i) chock (ii) Idling system (iii) Metering rod	03
	(b) Explain the use of CNG as substitute fuel for IC Engine.	04
	(c) Explain working of Simple carburetor with neat sketch.	07
OR		
	(c) With a line diagram explain the working of common rail fuel injection system.	07
Q.3	(a) Define following terms (i) Ice formation (ii) Vapour lock (iii) Back firing.	03
	(b) Why engine cooling is required? Explain air cooling system for I.C. engine.	04
	(c) Explain splash lubrication system used in automobile engines with neat sketch.	07
OR		
Q.3	(a) Write a short note on antifreeze solutions.	03
	(b) Give compression between wet sump and dry sump lubrication system.	04
	(c) Classify cooling system and discuss forced circulation thermo-stat cooling system with neat sketch.	07
Q.4	(a) What are the different factors that affect the ignition lag in S.I. engine combustion?	03
	(b) What are the different parameter considered to control the knock?	04
	(c) With the help of P-θ diagram explain the stages of combustion in S.I. engine.	07
OR		
Q.4	(a) State effect of supercharging on following parameter (i) Power output (ii) Mechanical efficiency (iii) Fuel consumption.	03
	(b) Write the advantages and limitations of supercharging SI and CI engines?	04
	(c) Explain with neat sketch the constant pressure turbocharging.	07
Q.5	(a) Write a short note on scavenging pump.	03
	(b) Explain Willan's line method for measuring friction power.	04
	(c) Explain the working of 4 stroke petrol engine with neat sketch.	07
OR		
Q.5	(a) What is delay period in C.I engine? Explain importance of delay period.	03
	(b) Draw and explain salient features of open combustion chamber.	04
	(c) Draw and explain cross scavenging. What are its merits and demerits?	07
