

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI(NEW) – EXAMINATION – SUMMER 2019****Subject Code:2160207****Date:16/05/2019****Subject Name:Alternative fuel and power systems****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) List different types of alternative fuels with its sub types.	03
	(b) Explain why it is difficult to implement use of alternative fuels in India?	04
	(c) Explain process of separation of Bio Diesel with suitable diagram.	07
Q.2	(a) Explain use of alcohols in S.I. and C.I. engines in brief.	03
	(b) Which fuel can be considered as Bio-diesel as per Indian standard. List properties.	04
	(c) Explain working 'Wankel Rotary Engine' with suitable sketch.	07
OR		
Q.3	(c) Explain 'Variable Compression Ratio engine' with suitable sketch.	07
	(a) Explain Process of biogas formation.	03
	(b) List and explain Factors affecting biogas formation	04
	(c) Which are different types of biogas plant. Explain any one.	07
OR		
Q.3	(a) List Properties of CNG as engine fuels.	03
	(b) Explain production process of Ethanol in brief.	04
	(c) Which are different types of CNG kit. List different components of advance CNG kit with its function.	07
Q.4	(a) List physical and chemical properties of hydrogen as fuel for engine.	03
	(b) Explain method of hydrogen storage for automobile applications.	04
	(c) Explain working of Polymer electrolyte membrane fuel cell with sketch.	07
OR		
Q.4	(a) List advantages of electric drives.	03
	(b) Explain Electric-Fuel cell hybrid configurations.	04
	(c) Explain series type and parallel type hybrid electric vehicle with suitable diagrams.	07
Q.5	(a) Advantages and limitations solar powered automobiles.	03
	(b) Draw and explain layout of solar powered automobiles in brief.	04
	(c) What are the factors affecting transesterification process? Explain.	07
OR		
Q.5	(a) List advantages and limitation of LPG as a fuel for automobile.	03
	(b) Write short note on Free piston engine.	04
	(c) Write short note on Eco Friendly Plastic fuels (EPF).	07
