

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-VI (NEW) EXAMINATION – WINTER 2020****Subject Code:2160207****Date:27/01/2021****Subject Name:Alternative fuel and power systems****Time:02:00 PM TO 04:00 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
Q.1	(a) Give classifications of alternative fuels.	03
	(b) Enlist advantages and disadvantages of biodiesel.	04
	(c) Why it is necessary to implement alternative fuels for vehicles in India? Explain in detail.	07
Q.2	(a) Discuss about 'Appropriate selection of biodiesel feedstock'.	03
	(b) Discuss advantages and disadvantages ethanol.	04
	(c) Explain working of Wankel engine with neat sketch.	07
Q.3	(a) Explain methanol production process with suitable reactions.	03
	(b) Discuss advantages & disadvantages of using LPG as an alternative fuel.	04
	(c) Explain different types of biogas plants.	07
Q.4	(a) Discuss about safety systems of LPG.	03
	(b) Discuss advantages and disadvantages of electric vehicles.	04
	(c) Explain major components of Biogas Plants in detail.	07
Q.5	(a) Write a note on storage of methanol.	03
	(b) Discuss major electrical components of Electric Vehicle with block diagram.	04
	(c) Explain different components of CNG fuel gas conversion kit.	07
Q.6	(a) Explain storage and dispensing systems of CNG.	03
	(b) Compare fixed dome biogas plant with floating drum biogas plant.	04
	(c) Explain Solar Vehicle with suitable diagram.	07
Q.7	(a) Compare fuel cell with battery.	03
	(b) Discuss advantages and disadvantages of hydrogen fuel.	04
	(c) Explain series and parallel type hybrid electric vehicle with sketches.	07
Q.8	(a) Explain three stages of biogas production process.	03
	(b) Write a short note on eco friendly plastic fuel.	04
	(c) Explain free piston engine with necessary diagrams.	07
