Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER I (NEW) – • EXAMINATION – SUMMER 2016

Subject Code: 2711110 **Date:19/05/2016**

Subject Name: Alternate Fuels and Energy

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.**

Q.1	**(a)**	Discuss importance and need of Alternative Fuels in India.	**07**
	(b)	Describe advantages and disadvantages of conventional and alternative fuels.	**07**
Q.2	**(a)**	Describe properties of Ethanol and explain method of its production.	**07**
	(b)	Discuss performance of Reformed alcohol in CI Engines.	**07**
		OR	
	(b)	Describe Availability and Comparative properties of Alternate fuels for CI Engine.	**07**
Q.3	**(a)**	Explain trans-esterification process for biodiesel production.	**07**
	(b)	Describe performance and emission characteristic of Vegetable oil as fuel.	**07**
		OR	
Q.3	**(a)**	Describe modification required to use CNG fuel in SI Engine.	**07**
	(b)	Discuss performance and emission characteristic of Biodiesel as fuel.	**07**
Q.4	**(a)**	Enlist and compare important properties of CNG, LPG and gasoline fuel.	**07**
	(b)	Discuss performance and emission characteristic of CNG as fuel.	**07**
		OR	
Q.4	**(a)**	Describe Storage & handling and Safety aspects while using hydrogen fuel.	**07**
	(b)	Discuss performance and emission characteristic of LPG as fuel.	**07**
Q.5	**(a)**	Describe hybrid vehicle with neat sketch. Differentiate between series and parallel hybrid vehicles.	**07**
	(b)	Compare performance of different High energy and power density batteries.	**07**
		OR	
Q.5	**(a)**	Describe Layout of an electric vehicle with neat sketch.	**07**
	(b)	Discuss performance and emission characteristic of Hydrogen as fuel.	**07**

****