Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER– I (New course)• REMEDIAL EXAMINATION – SUMMER 2015

Subject Code: 2711110 **Date:19/05/2015**

Subject Name: Alternate Fuels and Energy

Time: 10:30 am to 1:00 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)**	Explain importance of need for alternative fuels in India.	**07**
	(b)	Describe availability and compare important properties of major alternate fuels.	**07**
Q.2	**(a)**	Explain dual fuel system with neat sketch.	**07**
	(b)	Describe in detail performance of Biogas in Internal Combustion engine.	**07**
		OR	
	(b)	Discuss performance of Reformed alcohol in CI Engines.	**07**
Q.3	**(a)**	Describe Performance and Emission characteristics of Shale oil in IC Engine.	**07**
	(b)	Explain performance of Methanol-Gasoline blends in SI Engines.	**07**
		OR	
Q.3	**(a)**	Enlist methods for Ethanol production. Explain any one with neat sketch.	**07**
	(b)	With neat sketch explain Esterification process for biodiesel production.	**07**
Q.4	**(a)**	Describe and compare performance of LPG in SI and CI Engines.	**07**
	(b)	Discuss storage, handling and safety aspects of Hydrogen.	**07**
		OR	
Q.4	**(a)**	Explain modifications required in Engine to use CNG.	**07**
	(b)	Discuss use and performance of Hydrogen as Alternative in IC Engines.	**07**
Q.5	**(a)**	Describe modification required to use biodiesel in CI Engine.	**07**
	(b)	Explain and compare series Hybrid and Parallel Hybrid vehicles with neat sketch.	**07**
		OR	
Q.5	**(a)**	Draw layout of an Electric vehicle and explain major components with neat sketch.	**07**
	(b)	Compare performance of different High energy and power density batteries.	**07**

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