Seat No.:	Enrolment No
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Subject Code: 2711110

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER-I • EXAMINATION - WINTER 2014

Date: 12/01/2015

Suc	ject	Couc. 2711110	10
Tin	•	Name: Alternate Fuels and Energy 2:30 to 17:00 Total Marks: as:	70
	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a)	Discuss availability and compare properties of different alternative fuels for Gasoline fuel	07
	(b)	Enlist major properties of biogas and discuss modification required to use biogas in IC Engines.	07
Q.2	(a) (b)	Explain (1) Ignition accelerators (2) Reformed alcohol (3) Emulsion Fuel Discuss Engine performance & pollutant emissions using 20% Methanol-80% Gasoline blend by volume in multi cylinder gasoline engine. OR	07 07
	(b)	Explain different types of Ignition accelerators used with example of each type.	07
Q.3	(a)	Discuss engine performance & pollutant emissions using straight vegetable oil as fuel.	07
	(b)	Explain Esterification process in brief. Discuss various parameters affecting yield and properties of biodiesel during Esterification. OR	07
Q.3	(a) (b)	Discuss Engine performance & pollutant emissions using Biodiesel as fuel. Enlist three different dual fuel combinations. Explain operation of engine in dual fuel mode using suitable fuel combination.	07 07
Q.4	(a) (b)	Compare CNG and LPG as fuel for IC Engine. Discuss storage, handling and safety aspects for Hydrogen fuel. OR	07 07
Q.4	(a) (b)	With neat sketch explain main components of CNG conversion kit. Explain modifications required to use LPG as fuel in IC Engine.	07 07
Q.5	(a) (b)	Explain construction and working of electric vehicle. Compare engine performance & pollutant emission using Gaseous and Liquid fuels.	07 07
0.5	(-)	OR	07
Q.5	(a)	Enlist type of hybrid vehicles available and explain construction and working of any one hybrid vehicle with neat sketch.	07
	(b)	Differentiate AGM battery with conventional and with neat sketch explain construction of AGM battery.	07
