GUJARAT TECHNOLOGICAL UNIVERSITY

ME Semester –II Examination Dec. - 2011

Subject code: 1721102 Date: 12/12 Subject Name: Alternate fuels & energy Time: 02.30 pm - 05.00 pm Total Mark			2/2011	
			s: 70	
Instru	ıction	s:		
	2.]	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a)	What is the need of alternate fuels? Give merits and demerits of hydrogen as an alternate fuel.	07	
	(b)	Compare properties of LPG and CNG as alternate fuels.	07	
Q.2	(a) (b)	Explain use of methanol and gasoline blends in IC engine. Give engine modifications required for using alcohols as fuel. OR	07 07	
	(b)	Give properties of alcohols and explain any one method of its production.	07	
Q.3	(a) (b)	Give performance characteristics of IC engine using biogas as fuel. Explain performance and emission characteristics of IC engine using bio-diesel and diesel blends as fuel.	07 07	
0.3	(a)	OR Discuss safety aspects for hydrogen as fuel for engine	07	
Q.3	(a) (b)	Discuss safety aspects for hydrogen as fuel for engine. Give engine modifications required for using CNG as fuel.	07	
Q.4	(a)	Explain the spark ignition technique of using alcohols in diesel engine. Discuss its merits and demerits.	07	
	(b)	Explain hydrogen storage methods. OR	07	
Q.4	(a) (b)	Explain use of alcohol and diesel fuel emulsions in IC engine. Explain trans-esterification process for bio-fuel production.	07 07	
Q.5	(a) (b)	Explain hybrid vehicles power train configurations with figure. Explain layout and working of an electrical vehicle.	07 07	
Q.5	(a)	OR Explain the different types of batteries used in electric vehicles and its offset on engine performance.	07	
	(b)	effect on engine performance. Explain working and construction of solar vehicle.	07	
