Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER- II • EXAMINATION - SUMMER - 2017

Su	bject	Code: 2723913 Date:29/05/ 201	17
Tir	ne:02 truction 1. 2.		70
Q.1	(a)	What is the need for the movement towards alternate fuels and system for automotive applications?	07
	(b)	What are the disadvantages of using alcohols in IC engines?	07
Q.2	(a)	Brief about emission characteristics of methanol and gasoline blend used in C.I. engines.	07
	(b)	What type of fuel delivery systems are used for hydrogen in SI engines? OR	07
	(b)	Compare the fuel properties of CNG and LPG as engine fuel. How alternate fuel is selected to use in diesel engine?	07
Q.3	(a)	Discuss about the performance and emission characteristics of different blends of bio- diesel in detail with the help of neat graphs.	07
	(b)	Evaluate performance of an engine using biogas as fuel. OR	07
Q.3	(a)	Explain the procedure of manufacturing ethanol from sugarcane. List the desirable properties of ethanol. What are the modifications required if it is used in CI engine?	07
	(b)	Write the chemical equation for esterification of vegetable oil and explain esterification process.	07
Q.4	(a)	Explain how LPG can be used in SI and CI engines and discuss their performance characteristics.	07
	(b)	Write a short note on CNG conversion kit.	07
Q.4	(a)	OR Discuss the characteristics of vegetable oil and bio-diesel and compare with	07
•		the diesel.	
	(b)	List out and explain the techniques available for reduction of viscosity of vegetables oils.	07
Q.5	(a) (b)	Explain with a neat sketch the working of hydrogen operated diesel engine. Discuss the aspects of hydrogen storage and handling. Also list out the safety aspects in hydrogen usage as a fuel in an engine. OR	07 07
Q.5	(a)	Explain in detail the hybrid technology which used in automobile sector. How	07
	(b)	does it help to improve the environmental aspects? What do you mean by M85 and E85? Compare them.	07
