Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V- EXAMINATION - SUMMER 2016

Date: 06/05/2016

Total Marks: 70

Subject Code: 153503

Subject Name: Basics of Fuels Time: 02:30 PM to 05:00 PM

Instructions:			
	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a) (b)	What is the importance of cracking in petroleum refining? Explain types of cracking used in petroleum refining process What do you understand by fluidized catalytic cracking unit in refinery?	07 07
		Explain its working in detail.	
Q.2	(a)(b)	Explain the Lurgi Process of coal gasification with the help of a suitable diagram. Write notes on following: Oxidation and Hydrogenation of coal Grindability of coal	07 07
		Grindability of coal OR	
	(b)	Write notes on following: O Deoiling in petroleum refining O Deasphalting in petroleum refining	07
Q.3	(a)	What do you understand by Biochemical pathway of producing fuel from municipal waste?	07
	(b)	What do understand by Biodiesel? What are the environmental aspects of using biodiesel?	07
		OR	
Q.3	(a)	Discuss catalytic cyclic processes (Segas Process) of oil gasification with the help of suitable diagram.	07
	(b)	What do you understand by Mineral matter in coal? What are the types of mineral matter and what relation it has with ash content and with rank of coal?	07
Q.4	(a)	Explain the process of coal gasification. Where the Coal gasification technology can be utilized?	07
	(b)	Explain the process of anaerobic digestion, for producing bio gas from municipal waste, with the help of suitable diagram. OR	07
Q.4	(a)	What do you understand by Caking properties of coal? Write a note on Swelling index and caking index.	07
	(b)	What are the characteristics of gaseous fuel? Explain in detail.	07
Q.5	(a) (b)	 What are the characteristics of Liquid fuel? Explain in detail Write short notes on following: Specific gravity and Bulk density of coal Ultimate and proximate analysis of coal 	07 07

OR

Q.5	(a)	Explain the Hydrogenation Processes of oil gasification with the help of	07
		suitable diagram.	
	(b)	Write short notes on following:	07
		Composition and characteristics of Municipal waste	

• Composition and characteristics of Municipal waste

• Petroleum distillation and its major fractions
