Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V • EXAMINATION – WINTER • 2014

Subject Code: 152206 Date: 08-12-2014

Subject Name: Fuel Technology

Time: 10.30 am - 01.00 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)	List out the various components of Bomb calorimeter & explain detail method of finding C.V. of solid fuel.	07
	(b)	Discuss the aim of ultimate analysis & explain proximate analysis in detail.	07
Q-2	(a)	Explain main component of LPG & properties of LPG.	07
	(b)	Give the advantage of dry quenching & recovery process of various substances in Otto Hoffman method.	07
		OR	
	(b)	Discuss the Low temperature carbonization & High temperature carbonization.	07
Q-3	(a)	Write short note on: 1)Low temperature carbonization 2) Rank of coal 3) Weathering/slacking index of coal Index	07
	(b)	Describe in detail the stages of coal formation with their calorific values.	07
		OR	
Q-3	(a)	Write the procedure to find the following index of coke: 1) Micum index 2) shatter index 3) Cochrane index	07
	(b)	Discuss the following terms: 1) Theoretical calorific value 2) Petrography of coal	07
Q-4	(a)	Explain process unit of producer gas plant with neat sketch.	07
	(b)	Explain manufacturing process of water gas with figure.	07
		OR	
Q-4	(a)	Explain coke oven gas in detail.	07
	(b)	Explain Lurgi process or fixed bed gasifier.	07
Q-5	(a)	Why gaseous fuel is more important than liquid & solid fuel?	07
	(b)	Enlist advantages & disadvantages of natural gas.	07
		OR	
Q-5	(a)	Write advantages & disadvantages of CNG as a S.I. engine fuel.	07
	(b)	Explain following physical properties of coal: 1) Action of heat on coal 2) Hard grove grind-ability 3) Angle of repose.	07

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