Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI • EXAMINATION – SUMMER • 2014

Subject Code: 160302 **Date: 21-05-2014**

Subject Name: Analytical and Optical Instrumentation

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)**	Explain different biochemical and pathological laboratory techniques in clinical diagnosis.	**07**
	(b)	Explain principle and construction of Coulter Counter for blood cell counting.	**07**
Q.2	**(a)**	Explain the principle and block diagram of pulse oximeter.	**07**
	(b)	Write short notes on Incubator and Centrifuge.	**07**
		OR	
	(b)	Write short notes on Autoclave and Hot air oven.	**07**
Q.3	**(a)**	Enlist different types of chromatography and explain any one in detail.	**07**
	(b)	Explain the electrode used for blood pCO_2 measurement.	**07**
		OR	
Q.3	**(a)**	Explain different types of radiation sources used in spectrophotometry.	**07**
	(b)	Explain different types of monochromator.	**07**
Q.4	**(a)**	Explain the principle, block diagram and uses of glucometer.	**07**
	(b)	What is pH? Explain pH meter in detail.	**07**
		OR	
Q.4	**(a)**	Explain the principle, block diagram and uses of colorimeter.	**07**
	(b)	Describe the working of Semi Auto analyzer.	**07**
Q.5	**(a)**	Explain the distal end of endoscope.	**07**
	(b)	Explain flame photometry. Draw & explain the block diagram of flame photometer.	**07**
		OR	
Q.5	**(a)**	Explain endoscopy with its construction & types.	**07**
	(b)	Explain electron microscope in detail.	**07**

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