Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering - SEMESTER – IV• EXAMINATION – WINTER 2012

Subject code: 340301 **Date: 26/12/2012**

Subject Name: Analytical and Optical Instrumentation

Time: 02.30 pm - 05.00 pm **Total Marks: 70**

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **English version is considered to be Authentic.**

Q.1	(a)	Explain the recording and measuring techniques. List different recording system.	**07**
	(b)	Explain the working of pH electrode and state its principal.	**07**
Q.2			
	(a)	Explain the importance of recording system and explain any one of it.	**07**
	(b)	Explain the construction and working principal of pO2 electrode.	**07**
		OR	
	(b)	State the application of pCO2 and explain its working,	**07**
Q.3			
	(a)	Draw the block diagram of glucometer and explain its working.	**07**
	(b)	List the different light sources used in colorimeter and explain any one in detail.	**07**
		OR	
Q.3	(a)	Draw block diagram of spectrophotometer and expalin its each block.	**07**
	(b)	Explain the working principle of auto-analyser and state its application	**07**
Q.4			
	(a)	Explain the flow diagram of electrophoresis and its working.	**07**
	(b)	Explain the working principle of electronic microscope and state its application	**07**
		OR	
Q. 4	(a)	Give the application of tonometer and explain its working.	**07**
	(b)	Explain coulter counter with its block diagram.	**07**
Q.5			
	(a)	List the lab equipment used and explain one in detail.	**07**
	(b)	Explain hot-air oven and give its application.	**07**
		OR	
Q.5	(a)	Explain the any one method of blood cell counting	**07**
	(b)	Explain the working principle of auto clave.	**07**

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