

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.

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|-------------|---|-----------|
| 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 pO ₂ electrode. | 07 |
| | OR | |
| Q.3 | (b) State the application of pCO ₂ and explain its working, | 07 |
| | (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 explain 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 autoclave. | 07 |
