

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering Sem. - IV - Examination – June- 2011

Subject code: 340301

Subject Name: Analytical & Optical Instrumentation

Date: 04/06/2011

Time: 02:30 pm – 05:00 pm

Total Marks: 70

Instructions:

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

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|-------------|-----|---|-----------|
| Q.1 | (a) | What are the important points considered for measuring and Recording techniques? | 07 |
| | (b) | What is the principle of pH measurement? Explain reference Electrode. | 07 |
| Q.2 | (a) | Give different types of light sources and explain block diagram Of colorimeter. | 07 |
| | (b) | Explain the working principle for pCO ₂ measurement. | 07 |
| | | OR | |
| | (b) | Explain the working principle for pO ₂ measurement. | 07 |
| Q.3 | (a) | What are the critical parameters for spectrophotometer? Explain spectrophotometer with its block diagram. | 07 |
| | (b) | Explain any one detector for flame photometer. | 07 |
| | | OR | |
| Q.3 | (a) | Give the types of auto-analyzer and its applications. | 07 |
| | (b) | Draw block diagram of Chromatography and explain each Block. | 07 |
| Q.4 | (a) | Explain the working principle and block diagram of microscope. | 07 |
| | (b) | What do you mean by ophthalmoscope? Explain its working. | 07 |
| | | OR | |
| Q. 4 | (a) | Explain the electronic microscope and give its applications. | 07 |
| | (b) | Explain tonometer and give its applications. | 07 |
| Q.5 | (a) | Explain various methods of blood cell counting. | 07 |
| | (b) | Explain working principle of ultrasound cleaner. | 07 |
| | | OR | |
| Q.5 | (a) | Explain coulter blood cell counter. | 07 |
| | (b) | Explain working of hot air oven and application. | 07 |
