

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 pCO₂ 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**
