

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER- V • EXAMINATION – SUMMER- 2014**

**Subject Code: 151302****Date: 13-06-2014****Subject Name: Advanced Environmental Instrumentation****Time: 10:30 am to 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) Write a short note on pH meter and its applications in environmental engineering field. **07**  
(b) Write a short note on applications of conductivity meter. **07**
- Q.2** (a) Write a short note on fundamentals principles of Spectroscopy. **07**  
(b) Write a short note on “Toxicity test for industrial wastewater.” **07**
- OR**
- (b) Write a short note on selection of test organisms for toxicity test. **07**
- Q.3** (a) Explain the merits and demerits of the gas chromatograph. **07**  
(b) Explain the working principle and operation of each unit of Nephelo turbidity meter with neat sketch. **07**
- OR**
- Q.3** (a) What is chromatography? Explain stationary phase in chromatography **07**  
(b) Write a short note on High Performance Liquid chromatograph **07**
- Q.4** (a) Write a short note on UV-visible Spectrophotometer **07**  
(b) Derive and explain Lambert’s and Beer’s law. **07**
- OR**
- Q.4** (a) Write a short note on Infra-red Spectrophotometer. **07**  
(b) Explain Atomic Adsorption Spectroscopy in detail. **07**
- Q.5** (a) Explain working principle of Mass spectrophotometer. **07**  
(b) Write a short note on Solvent extraction methods of analysis **07**
- OR**
- Q.5** (a) Explain Working principle of Flame photometer. Which parameters can be measured using flame photometer? **07**  
(b) Write a short note on Electrochemical cell. **07**

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