

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE – SEMESTER – V (NEW) EXAMINATION – WINTER 2015**

**Subject Code: 2151302****Date: 17/12/ 2015****Subject Name: Advanced Environmental Instrumentation****Time: 10:30am to 1:00pm****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) Define the followings **07**  
 (I) Mean (II) Median (III) Standard deviation (IV) variance (V)  
 Electromagnetic spectrum (VI) Beer-Lambert law (VII) Chromatogram
- (b) (1) Define the term chromatography and spectroscopy **01**  
 (2) Write the two application of followings (**06**)  
 (1) UV-Visible spectroscopy (II) Infrared spectroscopy (III) Gas chromatography
- Q.2** (a) Write note on infrared spectroscopy **07**  
 (b) Explain in detail atomic absorption spectroscopy **07**
- OR**
- (b) Write a note on Raman spectroscopy **07**
- Q.3** (a) Write the environment significance and application of turbidity **07**  
 (b) Write a note on nephelometry **07**
- OR**
- Q.3** (a) Write a note on turbidity and its standard unit **07**  
 (b) Write a note on instrumental method of analysis **07**
- Q.4** (a) Draw the sketch and explain in detail Gas chromatography **07**  
 (b) Mention the classification of chromatography and write note on column chromatography **07**
- OR**
- Q.4** (a) Write a note on ion –exchange chromatography **07**  
 (b) Write a note on high performance liquid chromatography **07**
- Q.5** (a) Explain in detail ion-selective electrodes **07**  
 (b) Explain in detail TOC analyzer **07**
- OR**
- Q.5** (a) Explain in detail potentiometry **07**  
 (b) Explain in detail sensor method for determination of dissolved oxygen **07**

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