

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-V (NEW) - EXAMINATION – SUMMER 2018**

**Subject Code:2151302**

**Date:02/05/2018**

**Subject Name:Advanced Environmental Instrumentation**

**Time:02:30 PM to 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.

- Q.1** (a) Explain Average, Standard Deviation and Relative Standard Deviation. **03**  
(b) Write a short note on “Laboratory Errors and its types” **04**  
(c) What is Advanced Environmental Instrumentation? Give its significance in environmental engineering field. **07**
- Q.2** (a) Write a short note on pH meter. **03**  
(b) Define (I) Mean (II) Median (III) Variance (IV) True value **04**  
(c) Write the working principle of Ion Selective meter. **07**
- OR**
- (c) Derive and explain Lambert’s and Beer’s law. **07**
- Q.3** (a) Explain the conductivity meter. **03**  
(b) Write the working principle of Nephelo turbidity meter. **04**  
(c) Explain the Column chromatography with neat sketch. **07**
- OR**
- Q.3** (a) Differentiate between visual method & instrumental method for turbidity measurement. **03**  
(b) Discuss the application of TOC analyzer in environmental engineering field. **04**  
(c) Explain the Gas chromatography with neat sketch.. **07**
- Q.4** (a) Write applications of DO sensors. **03**  
(b) Explain Frequency distribution curve. **04**  
(c) Write a short note on Atomic Absorption Spectroscopy. **07**
- OR**
- Q.4** (a) What do you mean by Online sensors? **03**  
(b) Write a short note on Standard Hydrogen Electrode. **04**  
(c) Write a short note on UV-Visible spectrophotometer. **07**
- Q.5** (a) Write applications of Potentiometry. **03**  
(b) Differentiate between Raman spectroscopy and Infrared spectroscopy. **04**  
(c) Write a note on high performance liquid chromatography. **07**
- OR**
- Q.5** (a) What do you mean by Accuracy & Precision? **03**  
(b) Explain working principle of Flame Photometer **04**  
(c) Write a note on mass spectroscopy with neat sketch. **07**

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