

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGINEERING - SEMESTER-V • EXAMINATION – SUMMER 2013

Subject Code: 351703

Date: 16-05-2013

Subject Name: Analytical 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.
4. English version is considered to be Authentic.
5. Each question carry equal marks (14 marks)
6. Draw the figure wherever required

- Q.1** (a) Draw the schematic diagram of the X-Ray absorption spectrography.& explain in brief. **07**
(b) Explain the working principle of the ESR **07**
- Q.2** (a) List the property of Cesium- 134 **07**
(b) Explain the working principle of the NMR **07**
OR
(b) What is the importance of Gas Chromatograph ? Explain Basic Parts of a Gas Chromatograph . **07**
- Q.3** (a) Which are application guidelines needed to be considered for Analytical Systems - online Analysers? **07**
(b) How does the refractometer function ? **07**
OR
- Q.3** (a) List the Properties of Ultrasonic waves. **07**
(b) State the properties of Cobalt-60. **07**
- Q.4** (a) How does polarography function ? **07**
(b) Explain the working principle of oxygen analyser using electrical method. **07**
OR
- Q. 4** (a) Draw the electrical conductivity cell . Explain its working principle. **07**
(b) How can one measure Viscosity by Saybolt's viscometer ? **07**
- Q.5** (a) Explain the working principle of hotwire thermal conductivity cell . **07**
(b) How does Saturated Calomel Electrode electrode measure pH ? Explain. **07**
OR
- Q.5** (a) How does Measuring Electrode measure pH ? Explain **07**
(b) How can we measure the specific gravity of the sample by Radio Active Densitometer ? **07**
