

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. – SEMESTER – IV • EXAMINATION – SUMMER 2013

Subject Code: 240004**Date: 18-05-2013****Subject Name: Pharmaceutical Analysis - II****Time: 10.30 pm - 01.30 pm****Total Marks: 80****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is S/N ratio? Explain the source of noise in instrumental analysis. **06**
 (b) What are the advantages of instrumental analysis over volumetric analysis? **05**
 Describe classification of instrumental method of analysis.
 (c) What is validation? Explain analytical parameters to be validated. **05**
- Q.2** (a) Which retention mechanisms are involved in chromatography? Explain any two mechanisms in detail. **06**
 (b) Describe techniques of coating and development of TLC plates. **05**
 (c) Discuss the factors affecting column efficiency. **05**
- Q.3** (a) Describe the principle and types of paper chromatography. Write the advantages and limitations of paper chromatography. **06**
 (b) Give difference between [any two] **05**
 (i) Stationary phase and mobile phase
 (ii) Optically active compound and optically inactive compound
 (iii) Specific conductance and Equivalent conductance
 (c) Discuss biamprometric titration in detail. **05**
- Q.4** (a) Explain the principle and working of glass electrode. Write the limitation and use of glass electrode. **06**
 (b) Describe briefly the working and application of potentiometer. **05**
 (c) Write the factors affecting limiting current and diffusion current. **05**
- Q.5** (a) Explain principle of polarography and working of dropping mercury electrode. **06**
 (b) How will you determine the pKa values of acetic acid using pH meter. **05**
 (c) Explain the following terms. **05**
 (i) Specific rotation (ii) Pulse polarography (iii) Tailor made compound
 (iv) Stripping voltametry (v) Standard reduction potential
- Q. 6** (a) Draw and labeled diagram of polarimeter and discuss its applications. **06**
 (b) Write note on TGA. **05**
 (c) Difference DTA and DSC. Write application of both techniques. **05**
- Q. 7** (a) Discuss principle and application of Kohlrausch's law. **06**
 (b) Write application of conductometric titration. **05**
 (c) Calculate the equivalent conductance at 20° of NH₄OH at infinity dilution. **05**

$$\Lambda^{\infty}(\text{N H}_4\text{Cl}) = 130 \quad \Lambda^{\infty}(\text{OH}^-) = 174 \quad \Lambda^{\infty}(\text{Cl}^-) = 66$$
