

GUJARAT TECHNOLOGICAL UNIVERSITY**B.PHARM- SEM-IV-EXAMINATION – MAY 2012****Subject code: 240004****Date: 28/05/2012****Subject Name: Pharmaceutical Analysis II****Time: 10:30 am – 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) Explain reference electrode and ideal requirements of reference electrode. Describe calomel electrode. **06**
- (b) Discuss the principle of Polarography and explain typical current voltage curve. **05**
- (c) What is calorimetry and discuss the types of calorimetric techniques **05**
- Q.2** (a) Explain equivalent conductance and write the factors affecting the conductance **06**
- (b) Write the factors affecting limiting current and diffusion current. **05**
- (c) Write the advantages and disadvantages of Instrumental methods of analysis. Classify the Instrumental methods of analysis. **05**
- Q.3** (a) Explain the term [any three] **06**
- Two dimensional TLC
 - Tailor made compound
 - Specific optical rotation
 - Standard reduction potential
- (b) Explain validation and describe the validation of instrumental analytical methods. **05**
- (c) Explain the principle and working of glass electrode. Write the limitations of use of glass electrode. **05**
- Q.4** (a) Describe the principle of paper chromatography and discuss its various development techniques. Write the advantages and limitations of paper chromatography. **06**
- (b) Give difference between [any two] **05**
- Stationary phase and mobile phase
 - Equivalent conductance and specific conductance
 - Indicator electrode and reference electrode
- (c) What is S/N ratio? Explain the source of noise in instrumental analysis. **05**
- Q.5** (a) Define chromatography and describe the theories of chromatographic separation. **06**
- (b) Comment on following **06**
- Small and uniform particle size stationary phase is used in column chromatography
 - Equivalent conductance increases on dilution of electrolytic solution.
 - Glass electrode is kept water before it can be used as pH electrode.

- (c) How will you determine degree of dissociation of electrolyte using conduct meter. The equivalent conductance at 20°C of normal solution of KCl is 98.2 and for infinite dilution at same temperature are 131. Calculate degree of dissociation of KCl at this dilution. **04**
- Q. 6**
- (a) Explain the working of DME and write the advantages and limitations of DME **06**
- (b) Describe the variables that affect the column efficiency. **05**
- (c) 1. Classify electroanalytical methods of analysis. **05**
2. Calculate the volume of HCl required at the equivalence point in titration of 60 ml of 0.055 N NaOH with 0.1022N HCl
- Q.7**
- (a) Write note on following [any two] **06**
1. ORD and CD
2. DTA
3. Application of polarimeter
- (b) Explain Van Deemter equation. Discuss the factors affecting chromatographic peak broadening. **05**
- (c) Explain the types of Conductometric titrations **05**
