

GUJARAT TECHNOLOGICAL UNIVERSITY**B.Pharm – SEMESTER – IV - EXAMINATION – SUMMER- 2016****Subject Code: 240004****Date: 30/05/2016****Subject Name: Pharmaceutical Analysis - II****Time: 10:30 AM to 1:30 PM****Total Marks: 80****Instructions:**

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

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| Q.1 | (a) | Define the term chromatography. Give the detailed classification and discuss paper and column chromatography in brief. | 06 |
| | (b) | Enlist various theories of chromatography and discuss how plate and rate phenomenon associated with chromatographic separation. | 05 |
| | (c) | Define following term
1) Zone broadening 2) Retention time 3) Resolution
4) Chromatogram 5) Peak symmetry | 05 |
| Q.2 | (a) | What is the difference between analytical method and instrumental analytical method? Give the advantages and limitations of instrumental analytical method. | 06 |
| | (b) | What is validation? Give the significance of validation with respect to instrumental method of analysis. | 05 |
| | (c) | Discuss the pharmaceutical applications of thin layer chromatography. | 05 |
| Q.3 | (a) | Explain the following terms.
1) Specific conductance 2) Conductivity cell
3) Equivalent conductance | 06 |
| | (b) | Discuss the pharmaceutical application of conductometric methods. | 05 |
| | (c) | Factors affecting conductometric measurement. Discuss | 05 |
| Q.4 | (a) | Classify the different electroanalytical methods. Explain the term reference electrode and indicator electrode with suitable example. | 06 |
| | (b) | What is the difference between potential and pH. Discuss the principle and working of potentiometer. | 05 |
| | (c) | How do you calibrate the potentiometer? Briefly discuss the different electrodes used in potentiometry. | 05 |
| Q.5 | (a) | What is a polarographic technique? Classify the technique and draw a labeled diagram of DME. Give advantages and disadvantages of DME. | 06 |
| | (b) | What is half wave potential? Give the analytical differences between pulsed and differential pulse polarographic technique. | 05 |
| | (c) | Write an informative note on different currents of polarographic technique. | 05 |
| Q.6 | (a) | What is thermal method of analysis? Draw a labeled diagram and discuss the principle and working of DSC. | 06 |
| | (b) | Give the working principle of TGA. Discuss how TGA and DSC used as integral techniques in research and development in pharmaceutical industries? | 05 |
| | (c) | Draw a labeled diagram of Polarimeter and give the application of Polarimeter. | 05 |
| Q.7 | (a) | Describe the principle, advantages and disadvantages of the technique used for Optical active pharmaceuticals. How such instrument is calibrated? | 06 |
| | (b) | Answer the following.
1) Characteristics of stationary phase and mobile phase
2) Working and applications of stripping voltametry | 05 |
| | (c) | Write a note on Amperometric titration and its pharmaceutical applications. | 05 |
