Seat No.: _____ Enrolment No. _____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**B.Pharm – SEMESTER V • EXAMINATION – Summer 2017**

**Subject Code:2250003 Date: 06/06/2017**

**Subject Name: Pharmaceutical Analysis III**

**Time: 10.30 AM to 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)** | Define chemical shift. Explain factors affecting chemical shift. | **06** |
| | **(b)** | Describe instrumentation of PMR. | **05** |
| | **(c)** | Write a brief overview of C13 NMR spectroscopy. | **05** |
| **Q.2** | **(a)** | Explain: base peak, metastable ion peak and isotopic ion peak. | **06** |
| | **(b)** | Discuss principle of Mass Spectroscopy. | **05** |
| | **(c)** | Explain Mc-Lafferty rearrangement. | **05** |
| **Q.3** | **(a)** | Write a note on FT-IR. | **06** |
| | **(b)** | Discuss radiation sources used in IR spectroscopy. | **05** |
| | **(c)** | Describe sample handling techniques used in IR spectroscopy. | **05** |
| **Q.4** | **(a)** | Write the difference between AAS and AES. | **06** |
| | **(b)** | Describe the principle of flame photometer. | **05** |
| | **(c)** | Write a note on hollow cathode lamp. | **05** |
| **Q.5** | **(a)** | Explain Auxochrome, molar absorptivity and isosbetic point. | **06** |
| | **(b)** | What is EMR? Explain wave properties of EMR | **05** |
| | **(c)** | Describe principle of UV spectroscopy. | **05** |
| **Q. 6** | **(a)** | Write the difference between fluorescence and phosphorescence. | **06** |
| | **(b)** | Draw a well-labeled diagram of spectrofluorimeter. | **05** |
| | **(c)** | Write a brief over view of application of UV-visible spectroscopy. | **05** |
| **Q.7** | **(a)** | Describe calibration of UV-visible spectrophotometer as per IP. | **06** |
| | **(b)** | Give the fragmentation pattern of the following compounds<br>(i) Benzyl alcohol<br>(ii) Benzamide | **05** |
| | **(c)** | How will you differentiate between the following pairs of compounds using IR Spectroscopy<br>(i) $CH_3CH_2NH_2$ and $CH_3CH_2OH$<br>(ii) $CH_3COOH$ and $CH_3CHO$ | **05** |

**********