

GUJARAT TECHNOLOGICAL UNIVERSITY
B.Pharm - SEMESTER VII - EXAMINATION - WINTER 2017

Subject code: 270004

Date: 10-11-2017

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.**

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|------------|---|-----------|
| Q.1 | (a) Explain origin of U.V.-Visible absorption spectrum Explain: Chromophore, Bathochromic shift | 06 |
| | (b) State Beer Lambert's law. Discuss the factors that causes deviation from the law. | 05 |
| | (c) Explain construction and working of double beam spectrophotometer. | 05 |
| Q.2 | (a) Explain fluorescence and discuss the factor affecting fluorescence intensity. | 06 |
| | (b) Describe the instrumentation required for fluorescence analysis. What are primary filter and secondary filters? | 05 |
| | (c) List some solvents that can be used in ultraviolet, visible and infrared regions respectively. Give the wavelength restrictions. | 05 |
| Q.3 | (a) What is necessary criterion for absorption to occur in Infrared absorption? Explain types of molecular vibration associated with infrared absorption. | 06 |
| | (b) What distinguishes near IR absorption from mid IR absorption? Discuss its primary advantages. | 05 |
| | (c) Discuss constructions and working of Michelson interferometer. | 05 |
| Q.4 | (a) Explain the principles of Flame emission spectrophotometry and atomic absorption spectrophotometry. | 06 |
| | (b) Discuss about the interferences in AAS. | 05 |
| | (c) Write down the Application of Atomic absorption Spectroscopy. | 05 |
| Q.5 | (a) Discuss the theory of Mass spectroscopy. Explain chemical ionization technique in detail. | 06 |
| | (b) Explain: MALDI and Mc Lafferty rearrangement. | 05 |
| | (c) Write a note on Base peak and metastable ions. | 05 |
| Q.6 | (a) Explain with help of neat and labeled diagram NMR Spectrometer and describe various operational modalities briefly. | 06 |
| | (b) Write a note on :1] ^{13}C - NMR 2] TMS as internal standard. | 05 |
| | (c) What is chemical shift? Discuss the factors affecting chemical shift. | 05 |
| Q.7 | Write a note on [any 4]
1. Hollow Cathode Lamp 2. ICP 3. Various regions of EMR
4. Monochromators 5. Interference in AAS | 16 |
