

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. – SEMESTER – V • EXAMINATION – WINTER • 2016

Subject Code: 2250003

Date: 28-11-2016

Subject Name: Pharmaceutical Analysis - III

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.**

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|-------------|---|-----------|
| Q.1 | (a) What is Electro magnetic radiation? Discuss properties of EMR. | 06 |
| | (b) Explain following terms: Wavelength, frequency, line spectra, Amplitude in wave, wave number. | 05 |
| | (c) Write brief note on: Beer Lambert's Law. | 05 |
| Q.2 | (a) Discuss the deviations of Beer Lambert's law. | 06 |
| | (b) Explain Bathochromic shift and Hypsochromic shift. What is the significance of Woodward Fieser Rule? Explain with example. | 05 |
| | (c) Draw the flow diagramme of UV-visible spectrophotometer. Discuss briefly about monochromators used in UV spectrophotometers. | 05 |
| Q.3 | (a) What is Fluorescence and Phosphorescence? Explain Jablonski Diagramme. | 06 |
| | (b) Discuss the Instrumentation of Fluorescence spectroscopy. | 05 |
| | (c) Write note on FT-IR spectroscopy. | 05 |
| Q.4 | (a) Discuss theory of IR spectroscopy? Explain stretching and bending vibrations in brief. | 06 |
| | (b) Discuss the calibration of IR spectrophotometer. | 05 |
| | (c) What is Atomic spectroscopy? Discuss interferences observed in atomic absorption spectroscopy. | 05 |
| Q.5 | (a) Explain: Base peak, McLafferty rearrangement, Nitrogen rule in mass spectroscopy. | 06 |
| | (b) Discuss the radiation sources used in atomic spectroscopy. | 05 |
| | (c) What are different ionization techniques used in Mass spectrometry? Explain any one in detail. | 05 |
| Q. 6 | (a) What is chemical shift in NMR? Discuss factors affecting chemical shift. | 06 |
| | (b) Enlist various mass analysers? Write note on Quadrupole mass analyser. | 05 |
| | (c) What are different information obtained from NMR signal. | 05 |
| Q.7 | (a) Discuss the instrumentation of NMR spectrometer. | 06 |
| | (b) What is spin spin coupling explain with example? | 05 |
| | (c) Write note on C^{13} NMR. How it differs from H^1 NMR? | 05 |
