

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM - SEMESTER- 5 EXAMINATION – WINTER -2019**Subject Code: 2250003****Date: 20-11-2019****Subject Name: Pharmaceutical Analysis III****Time: 02:30 PM TO 05:30 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: wavelength, frequency, wave number, fluorescence, Fermi resonance, base ion 06
(b) Explain various types of deviations from Beers Lambert's law. 05
(c) Derive Beer-Lambert's law equation. 05
- Q.2** (a) Explain various monochromators used in UV-Visible spectrophotometer. 06
(b) One tablet of drug (mol. wt.: 225, $\epsilon = 570$) when dissolved and diluted to 1500 ml with water gave absorbance of 0.625 at 275 nm. Calculate mg of drug present in one tablet. 05
(c) Explain different types of molecular vibrations in IR spectroscopy. 05
- Q.3** (a) Explain various factors affecting vibrational frequency in IR spectroscopy. 06
(b) Explain briefly principle and working of thermal detectors. 05
(c) Write a detailed note on FTIR along with its advantages. 05
- Q.4** (a) What is interference in atomic spectroscopy? List different types of interference and explain each in brief. 06
(b) Write a brief note on hollow cathode lamp. 05
(c) Differentiate : premix burner and total consumption burner used in flame photometry. 05
- Q.5** (a) Explain in detail chemical ionization source used in mass spectrometer. 06
(b) Write a detailed note on quadrupolar analyzer. 05
(c) Explain briefly principle of mass spectrometry and draw a labeled diagram of mass spectrometer. 05
- Q.6** (a) Explain chemical shift and magnetic anisotropy. 06
(b) Explain in detail spin spin coupling alongwith example. 05
(c) Differentiate: 05
1. Proton and C13 NMR spectroscopy
2. Hard source and soft source
- Q.7** (a) Explain various factors affecting fluorescence intensity. 06
(b) Write a brief note on applications of fluorimetry. 05
(c) Explain principle and applications of atomic absorption and emission spectrophotometry. 05