

GUJARAT TECHNOLOGICAL UNIVERSITY
B.Pharm - SEMESTER- VII EXAMINATION – SUMMER -2021

Subject Code:270004**Date: 06/08/2021****Subject Name: Pharmaceutical Analysis III****Time:10:30AM TO 01:30PM****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, wave number, parent ion, chemical shift, spin spin coupling, ; band spectra **06**
- (b) Explain chemical and instrumental deviations responsible for deviations from Beer-Lambert's law. **05**
- (c) Explain briefly principle and theory of absorption spectroscopy. **05**
- Q.2** (a) Draw a labeled diagram of UV-Visible spectrophotometer and explain in detail photo multiplier tube. **06**
- (b) Explain: bathochromic shift and hypochromic shift. List various applications of UV spectroscopy. **05**
- (c) Explain different types of molecular vibrations in IR spectroscopy. **05**
- Q.3** (a) Write a brief note on thermal sources and thermal detectors. **06**
- (b) Write a brief note on FTIR. **05**
- (c) Explain any three factors affecting vibrational frequency in IR spectroscopy. **05**
- Q.4** (a) Explain various methods for minimization of interferences in atomic absorption spectrophotometry. **06**
- (b) Explain briefly principle and instrumentation of flame photometry. **05**
- (c) Explain in detail photometric titrations. **05**
- Q.5** (a) Explain principle and application of mass spectrometry. **06**
- (b) Explain electron ionization source in detail. **05**
- (c) Describe magnetic analyzer and time of flight analyzer. **05**
- Q. 6** (a) Explain theory and principle of NMR spectroscopy. **06**
- (b) Describe in detail various factors affecting chemical shift. **05**
- (c) Write a brief note on C13 NMR spectroscopy. **05**
- Q.7** (a) Differentiate: fluorescence and phosphorescence. Explain various structural requirements for showing fluorescence. **06**
- (b) Write a brief note on instrumentation of photoflourimeter. **05**
- (c) Describe in detail sample handling in IR spectroscopy. **05**
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