

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM - SEMESTER- 5 EXAMINATION – SUMMER -2019

Subject Code: 2250003

Date: 31-05-2019

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.

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|-------------|---|-----------|
| Q.1 | (a) State Beer-Lambert's law and explain chemical and instrumental deviations. | 06 |
| | (b) Explain instrumentation of UV- Visible spectrophotometer. | 05 |
| | (c) Define: chemical shift, base ion, wavelength, wave number, fluorescence. | 05 |
| Q.2 | (a) Explain in brief principle and application of mass spectrometry. Draw a labeled block diagram of mass spectrometer. | 06 |
| | (b) List various ionization sources used in mass spectrometry. Explain chemical ionization source in detail. | 05 |
| | (c) Write a note on time of flight analyzer. | 05 |
| Q.3 | (a) Describe various factors affecting chemical shift. | 06 |
| | (b) Describe theory, principle and applications of NMR spectroscopy. | 05 |
| | (c) Differentiate: Atomic absorption and Atomic emission spectrophotometry. | 05 |
| Q.4 | (a) Explain instrumentation and applications of fluorimetry. | 06 |
| | (b) Write a brief note on photomultiplier tube. | 05 |
| | (c) Explain spin spin coupling with example. | 05 |
| Q.5 | (a) Describe principle, instrumentation and applications of flame photometry. | 06 |
| | (b) Explain principle, instrumentation and advantages of FTIR. | 05 |
| | (c) Write a note on C13 NMR spectroscopy. | 05 |
| Q. 6 | (a) Explain various interferences in atomic absorption spectrophotometry and various approaches for its minimization. | 06 |
| | (b) Explain various factors affecting fluorescence intensity. | 05 |
| | (c) Explain principle and instrumentation of ICP-AES. | 05 |
| Q.7 | (a) Explain sample handling in IR spectroscopy. | 06 |
| | (b) Explain various factors influencing vibrational frequency in IR spectrophotometry. | 05 |
| | (c) Describe thermal detectors used in IR spectrophotometry. | 05 |
