

GUJARAT TECHNOLOGICAL UNIVERSITY
M.PHARM - SEMESTER-1 EXAMINATION – SUMMER-2019

Subject Code: MAT101T**Date: 28/05/2019****Subject Name: Modern Pharmaceutical Analytical Techniques****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) | What is fluorescence Quenching? Discuss its importance. | 06 |
| | (b) | Describe Michaelson interferometer with a diagram. | 05 |
| | (c) | Discuss Laws and Instrumentation associated with UV-Visible spectroscopy. | 05 |
| Q.2 | (a) | What is isotopic abundance? Discuss general rules of fragmentation in MS. | 06 |
| | (b) | Discuss MALDI-MS. | 05 |
| | (c) | Discuss Mc-Lafferty rearrangement. | 05 |
| Q.3 | (a) | What is chemical shift? Describe factors affecting chemical shift. | 06 |
| | (b) | Explain NOE in detail. What are the problems in integration C13 spectra. | 05 |
| | (c) | How can you differentiate between o, m and p xylene on the basis of their proton decoupled CMR spectrum. | 05 |
| Q.4 | (a) | Explain the terms in relation to chromatography- capacity factor, resolution, plate number | 06 |
| | (b) | Write a note on HPTLC and its usefulness in comparison to HPLC. | 05 |
| | (c) | Discuss in detail about affinity chromatography. | 05 |
| Q.5 | (a) | What is electrophoresis? Discuss capillary electrophoresis in detail. | 06 |
| | (b) | Describe – Zone and moving boundary electrophoresis. | 05 |
| | (c) | Describe the principle of atomic absorption spectroscopy. Discuss atomization techniques used. | 05 |
| Q. 6 | (a) | Write a note on Base peak, Metastable peak and Parent peak. | 06 |
| | (b) | What are different X ray diffraction methods? Discuss Braggs law. | 05 |
| | (c) | What are thermal methods of analysis? Discuss principle and applications of TGA. | 05 |
| Q.7 | (a) | Write a detailed note on Ion Selective Electrodes. | 06 |
| | (b) | Explain Solvent interferences and Ionization interferences in Atomic spectroscopy. | 05 |
| | (c) | Discuss the terms- Auxochrome and Shielding effect. | 05 |
