

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.PHARM - SEMESTER- 6 EXAMINATION – SUMMER -2019**

**Subject Code: 2260003**

**Date: 08-05-2019**

**Subject Name: Pharmaceutical Analysis IV**

**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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|-------------|-----|---------------------------------------------------------------------------------------------------------------------|-----------|
| <b>Q.1</b>  | (a) | Explain Bragg's law and write a note on different method for x-ray diffraction study.                               | <b>06</b> |
|             | (b) | Write a note on GLP.                                                                                                | <b>05</b> |
|             | (c) | Explain the Principle of Ion exchange and Super critical Fluid chromatography.                                      | <b>05</b> |
| <b>Q.2</b>  | (a) | Explain the Principle of Gas Chromatography. Enlist the detectors used in GC and explain any one.                   | <b>06</b> |
|             | (b) | Explain the Various steps involved in Patent filling.                                                               | <b>05</b> |
|             | (c) | Give the application of X-ray diffraction study.                                                                    | <b>05</b> |
| <b>Q.3</b>  | (a) | Discuss the Principle and application of HPLC.                                                                      | <b>06</b> |
|             | (b) | Write a note on Raman spectroscopy.                                                                                 | <b>05</b> |
|             | (c) | Give an overview of LC-MS/MS.                                                                                       | <b>05</b> |
| <b>Q.4</b>  | (a) | Write a short note on Affinity chromatography.                                                                      | <b>06</b> |
|             | (b) | Give a brief note on GC-MS.                                                                                         | <b>05</b> |
|             | (c) | Write a note on ISO 9001:2000.                                                                                      | <b>05</b> |
| <b>Q.5</b>  | (a) | Write a note on RIA.                                                                                                | <b>06</b> |
|             | (b) | Give brief idea about HETP, Peak asymmetry factor, Resolution.                                                      | <b>05</b> |
|             | (c) | Write a note on GATT and TRIPS.                                                                                     | <b>05</b> |
| <b>Q. 6</b> | (a) | Discuss in detail on HPLC instrumentation.                                                                          | <b>06</b> |
|             | (b) | Explain principle, methodology and application of ELISA.                                                            | <b>05</b> |
|             | (c) | Write a note on Isotope dilution analysis.                                                                          | <b>05</b> |
| <b>Q.7</b>  | (a) | Discuss the Principle and Instrumentation of HPTLC.                                                                 | <b>06</b> |
|             | (b) | Write a note on Neutron Activation Analysis.                                                                        | <b>05</b> |
|             | (c) | Enlist the parameters for Analytical Method Validation as per ICH guidelines and discuss on Accuracy and Precision. | <b>05</b> |

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