

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.Pharm - SEMESTER VI- EXAMINATION – WINTER -2020****Subject Code:2260003****Date: 07/01/2021****Subject Name: Pharmaceutical Analysis IV****Time: 2:00 PM TO 4:00 PM****Total Marks: 54****Instructions:**

1. Attempt any **THREE** questions from Q-1 to Q-6.
2. Q.7 is compulsory to attempt.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks.

- Q.1** (a) Write an explanatory note on RIA and ELISA. **06**  
(b) Give an overview of LC-MS and LC-MS/MS. **05**  
(c) Write a detailed note on filing of Indian Patent Application. **05**
- Q.2** (a) Define Analytical Method Validation. Enlist and explain Validation Parameters as per ICH guide lines. **06**  
(b) Enlist the differences as well as similarities between TLC and HPTLC. **05**  
(c) Write a detailed account on Partition and Adsorption Chromatography. **05**
- Q.3** (a) Explain the generation of X-rays. Derive Bragg's Law equation. Enlist the application of X-rays diffraction. **06**  
(b) What is Radioactive substance? Explain Isotopes Dilution Analysis & Liquid Scintillation Systems. **05**  
(c) Write an explanatory note on ISO 9001:2000. **05**
- Q.4** (a) Explain the principle of GSC and GLC. Draw the diagram of GC instrument. Discuss different mobile and stationary phases used for GC. **06**  
(b) Give an overview of Raman Spectroscopy. **05**  
(c) Which are the units for Radioactivity measurement? How we can measure the Radioactivity? Enlist the applications of Radio nuclides. **05**
- Q.5** (a) What is Guard Column? Explain the theory & principle of HPLC. Draw the labeled diagram of HPLC instrument. Explain the mobile & stationary phases for Normal and RP-HPLC. **06**  
(b) Write a detailed note on Nephelometry & Turbidimetry. **05**  
(c) Give some account on **any two** detectors for GC. **05**
- Q. 6** (a) Discuss the basic principle & theory of Ion-exchange as well as Size exclusion Chromatography along with their applications. **06**  
(b) Explain in detail the Super Critical Fluid Chromatography. **05**  
(c) Give some account on GATT and TRIPS. **05**
- Q.7** (a) Write a detailed note on GLP. **06**
- OR**
- (a) Give an overview of GC-MS and compare HPLC with GC. **06**
- OR**
- (a) Enlist the applications of GC and HPLC. **06**

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