Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.Ph. - SEMESTER–VI • EXAMINATION – WINTER -2022

Subject Code: 2260003 **Date: 28/12/2022**

Subject Name: Pharmaceutical Analysis IV

Time: 02:30pm to 05:30pm **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)**	Explain the principle and instrumentation of Super Fluid Chromatography.	**06**
	(b)	What is analytical method validation and explain various validation parameters as per ICH guideline.	**05**
	(c)	Explain various stationary phases used in gas chromatography.	**05**
Q.2	**(a)**	What are x-rays? How they can be generated? Derive Bragg's equation and Enlist the applications of x-ray diffraction.	**06**
	(b)	Write a short note on Raman Spectroscopy.	**05**
	(c)	Enlist the similarities and differences between HPLC & HPTLC.	**05**
Q.3	**(a)**	Discuss theory and principle of GC. Draw the instrumental diagram and explain the detectors used for GC.	**06**
	(b)	Explain objective and advantages of ISO 9001 standards. Also explain quality management system in pharmaceutical industry.	**05**
	(c)	Write a detailed note on Nephalometry & Turbidimetry.	**05**
Q.4	**(a)**	Explain technique of Affinity chromatography.	**06**
	(b)	Give some account on GATT and TRIPS.	**05**
	(c)	Write a detailed account on Partition and Adsorption Chromatography.	**05**
Q.5	**(a)**	Write a detailed note on GLP.	**06**
	(b)	Describe application of X-ray crystallography in detail.	**05**
	(c)	Explain hyphenation technique: LC-MS.	**05**
Q. 6	**(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)	Describe different steps of filling patent in detail.	**05**
	(c)	Write a short note on ELISA.	**05**
Q.7	**(a)**	Which are the units for Radioactivity measurement? How we can measure the Radioactivity? Enlist the applications of Radio nuclides.	**06**
	(b)	Explain principle and applications of ion exchange chromatography.	**05**
	(c)	Explain isotope dilution analysis and liquid scintillation counter.	**05**

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