Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.PHARM - SEMESTER– 6 EXAMINATION – WINTER -2019

Subject Code: 2260003 **Date: 30-11-2019**

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.**

Q.1	**(a)**	Define: retention time, retention volume, HETP, copyright, trademark, validation	**06**
	(b)	Explain various modes of HPLC along with stationary phases.	**05**
	(c)	Write a brief note on supercritical fluid chromatography.	**05**
Q.2	**(a)**	Write a detailed note on HPTLC.	**06**
	(b)	List various method validation parameters and explain any three validation parameters.	**05**
	(c)	List ideal requirements of sample injector. Explain rotary valve injector in HPLC.	**05**
Q.3	**(a)**	Explain various characteristics of mobile phase to be kept in mind while selection of solvents in HPLC.	**06**
	(b)	Explain in detail UV- Visible detector in HPLC.	**05**
	(c)	Write a detailed note on columns used in GC.	**05**
Q.4	**(a)**	Explain electron capture detector and flame ionization detector.	**06**
	(b)	Write a brief note on Raman spectrophotometry.	**05**
	(c)	Explain isotope dilution analysis.	**05**
Q.5	**(a)**	Explain the principle and application of nephelometry and turbidimetry.	**06**
	(b)	Describe theory and applications of Radioimmunoassay.	**05**
	(c)	Write a detailed note on stationary phases used in GC.	**05**
Q. 6	**(a)**	Differentiate the following : 1. HPTLC and TLC 2. HPLC and GC	**06**
	(b)	Explain Bragg's law and application of X-ray diffraction.	**05**
	(c)	Explain in detail hyphenation technique, LC-MS.	**05**
Q.7	**(a)**	Explain the principle and instrumentation of X- ray diffraction spectroscopy.	**06**
	(b)	Write a detailed note on GLP.	**05**
	(c)	Explain briefly ISO 9000 standards.	**05**

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