Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.PHARM – SEMESTER – 6- EXAMINATION –WINTER - 2018

Subject Code:2260003 Date: 20/11/2018

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)**	What are x-rays? How they can be generated? Derive Bragg's equation and enlist the applications of x-ray diffraction.	**06**
	(b)	Define and explain Radio Immuno Assay in detail.	**05**
	(c)	Write a short note on Nephelometry and Turbidimetry.	**05**
Q.2	**(a)**	Define validation. Enlist validation parameters and explain each in brief.	**06**
	(b)	What is IPR? Give some account on steps for filling patent.	**05**
	(c)	Write a short note on Raman Spectroscopy.	**05**
Q.3	**(a)**	Explain basic principle, theory and applications of ion exchange and size exclusion chromatography.	**06**
	(b)	Enlist the similarities and differences between HPLC & HPTLC.	**05**
	(c)	Write a short note on ELISA.	**05**
Q.4	**(a)**	Discuss theory and principle of GC. Draw the instrumental diagram and explain the detectors used for GC.	**06**
	(b)	Explain basic principle, theory and applications of Super Critical Fluid Chromatography.	**05**
	(c)	Write a short note on ISO 9001:2000.	**05**
Q.5	**(a)**	Define radioactive compound. Explain isotopes dilution analysis and liquid scintillation system.	**06**
	(b)	Discuss in brief GATT and TRIPS.	**05**
	(c)	Write a short note on GLP.	**05**
Q. 6	**(a)**	Explain the theory and principle of HPLC. Discuss in detail the instrumentation of HPLC with diagram.	**06**
	(b)	Discuss different mobile and stationary phases for GC.	**05**
	(c)	Enlist the applications of partition and adsorption chromatography.	**05**
Q.7	**(a)**	Write a short note on mobile and stationary phases for normal and reversed phase HPLC. Enlist the applications of HPLC.	**06**
	(b)	Give the overview of LC-MS and LC-MS/MS.	**05**
	(c)	Explain the interaction of nuclear radiation with matter. What are the units of radio activity? How radio activity can be measured?	**05**

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