Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.PHARM.-SEMESTER–VIII- EXAMINATION –SUMMER-2017

Subject Code: 280004 Date: 04/05/2017

Subject Name: Pharmaceutical Analysis IV

Time: 10:30 AM to 01:30 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)	Explain the principle and applications of Raman Spectroscopy.	**06**
	(b)	Discuss the applications of X-ray diffraction technique.	**05**
	(c)	Write a note on nephelometry.	**05**
Q.2	(a)	Discuss the theories of chromatography.	**06**
	(b)	Write applications of GC and GC-MS.	**05**
	(c)	Define: (i)Retention time (ii)Tailing factor (iii)Capacity factor (iv)Selectivity factor (v)Resolution	**05**
Q.3	(a)	Differentiate between: (i)Analytical and guard column (ii)Normal and reverse phase chromatography (iii)Isocratic and gradient elution.	**06**
	(b)	Explain principle behind ion-exchange chromatography. Discuss the factors affecting retention in this technique.	**05**
	(c)	Explain the principle of separation in size exclusion and affinity chromatography.	**05**
Q.4	(a)	With a suitable diagram, describe the components of a gas chromatograph.	**06**
	(b)	Describe flame ionization detector in gas chromatography.	**05**
	(c)	Give an account of various stationary and mobile phases used in GC.	**05**
Q.5	(a)	Compare and contrast advantages and limitations of HPLC with HPTLC.	**06**
	(b)	Discuss the various applications of TLC and HPTLC.	**05**
	(c)	Describe the instrumentation in HPTLC.	**05**
Q. 6	(a)	Define (i) Intellectual property (ii) Limit of detection (iii) Accuracy (iv) Precision (v) Rf value (vi) Calibration	**06**
	(b)	Discuss the requirements for an invention to be patentable.	**05**
	(c)	Write a note on supercritical fluid chromatography.	**05**
Q.7	(a)	Name the different radiochemical methods of analysis. Explain in detail any one of them.	**06**
	(b)	Explain the principle and advantages of RIA.	**05**
	(c)	Describe the steps for filing a patent application in India.	**05**

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