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Seat No.:		GUJARAT TECHNOLOGICAL UNIVERSITY	
		M.PHARM- SEM-I-EXAMINATION – JULY 2012	
Subject code: 910001			
•		ne: Modern Analytical Techniques	
Time: 02:30 pm – 05:30 pm		<u>-</u>	
	uction		
		pt any five questions.	
		suitable assumptions wherever necessary.	
	_	es to the right indicate full marks.	00
Q.1	(a)	Give principle of NMR spectroscopy. How NMR spectroscopy helps in the structure elucidation of compounds.	06
	(b)	Write short notes on 2D NMR.	05
	(c)	Define the following terms : (Any Two)	05
	, ,	(i) Chemical shift (ii) Spin-spin decoupling	
		(iii) Shielding effect	
Q.2	(a)	Give brief account about different techniques of ion generation in Mass	06
	(5.)	spectrometry.	
	(b)	Explain principle and working of Quadrupole mass analyzer.	05
	(c)	Define the following terms : (Any Two) (i) Mc-Lafferty rearrangement (ii) Base Peak	05
		(iii) Metastable peak	
		(iii) included positi	
Q.3	(a)	What is Attenuated Total Reflectance (ATR). Give principle of IR	06
	(h)	spectroscopy. What is FT –IR.	05
	(b)	How IR spectroscopy is helpful in Pharmacy.  Give applications of atomic absorption spectroscopy in Pharmacy.	05 05
	(0)	erro applications of atomic about produced by in a marriady.	
<b>Q.4</b>		Explain principle of UV-Vis. Spectroscopy.	06
	(b)	What is derivative spectroscopy? Explain in brief.	05 05
	(c)	What do you mean by X-ray diffraction? Explain Bragg's law.	US
Q.5	(a)	What is HPLC.? Explain the principle of HPLC.	06
	(b)	What detectors are used in Gas chromatography. Explain working of	05
	(0)	any one detector.	05
	(c)	Write short notes on (Any One) (i) Super fluid chromatography	UO
		(ii) LC-MS	
	, ,		
Q. 6	(a)	Give principle of electrophoresis. Explain Zone Electrophoresis.	06

(b) What is Radioimmuno- assay technique. Give its application in 05 Pharmacy. Write in brief about reference standards. 05 (c) 06 What are different methods of Thermal analysis. Explain DSC in detail. Q.7 (a) Classify chromatographic methods on the basis of mechanism of (b) 05 separation. 05 Discuss Optical Rotatory Dispersion with suitable examples. What is Octant (c) rule. \*\*\*\*\*\*