Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY M Phorm SEMESTED LAFVAMINATION SUMMED 2013

Subiect		: 910207 Date: 22-05-2013	
Subject	Name 0.30 a	e: Advanced Spectroscopic Techniques am - 01.30 pm Total Marks: 80	
2.	Make	npt any five questions. e suitable assumptions wherever necessary. res to the right indicate full marks.	
Q.1	(a)	Give a detail account on Instrument used in Electron spin resonance spectrometry?	06
	(b) (c)	Write note on liquid phase chemiluminescence assay method. Discuss theory of Photoacoustic spectrometry.	05 05
Q.2	(a) (b)	How photoacoustic signal is affected by the nature of the sample. Discuss the hyperfine interaction observed in Electron spin resonance spectrometry.	06 05
	(c)	Write a note on light source used in photoacoustic spectrometry.	05
Q.3	(a) (b) (c)	Discuss the Principle of chemiluminescence. Write the applications of Electron spin resonance spectrometry. Give a detail account of the apparatus used for the measurement of chemiluminescence in a chemical reaction.	06 05 05
Q.4	(a) (b) (c)	Write a note on the principle of Raman Spectrometry. Discuss chemical shift observed in NMR spectroscopy. Write a note on the application of laser.	06 05 05
Q.5	(a) (b) (c)	Discuss the mechanism of laser action and write classification of laser. Write a brief note on the instrument used to measure Raman spectra. Write note on spin spin splitting of ¹³ C NMR signal.	06 05 05
Q. 6	(a) (b) (c)	Write a note on COSY NMR technique. Discuss isotopic dilution technique in radiochemical analysis. Explain molecular relaxation and off resonance decoupling in ¹³ C NMR.	06 05 05
Q.7	(a) (b) (c)	Write a note on NMR spectrometers. Give a detailed account on HETCOR experiment. Discuss instrument used in Radiochemical analysis.	06 05 05
