Enrollment No: E	xam Seat No:
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C.U.SHAH UNIVERSITY

Winter Examination-2015

Subject Name: Instrumental Methods of Analysis - I

Subject Code: 4LS03IMA1/4SC03IMA1 Branch: B.Sc (Life Science)

Semester :3 Date :5/12/2015 Time :2:30 To 5:30 Marks 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

Q-1		Attempt the following questions:	(14)
	a) b)	Write down Beer- Lambert law The absorbance of 6×10^{-4} M solution is 0.60, the path length of the cuvette is 1 cm. calculate the molar absorption coefficient	1 1
	c) d) e) f) g) h) i) j) k) l) m) n)	Define Molar absorption coefficient What is absorption spectroscopy? What is Principle of UV-Vis spectroscopy? What is difference between Raman spectroscopy and IR spectroscopy What are ranges of IR radiations? What are near UV and far UV radiations? Write down the basic principle of NMR. Draw schematic diagram of UV visible spectroscopy What is photometry? Define absorbance. Define transmittance What is basic difference between FAS and AAS?	1 1 1 1 1 1 1 1 1
Q-2	A B	Attempt all questions Explain Monochromator and filter in UV Visible Spectroscopy Explain Double Beam Splitter working with diagram	(14) 7 7
Q-3	A R	Attempt all questions Explain electromagnetic radiation with absorption and emission of light. Explain applications of LIV Visible spectroscopy	(14) 7





Q-4	A B	Attempt all questions Explain basic principles of FAS and AAS Explain instrumentation of Flame atomic spectroscopy(FAS)	(14) 7 7
Q-5	A B	Attempt all questions Explain Infrared rays in detail with basic principle behind IR spectroscopy Explain AAS instrumentation in detail.	(14) 7 7
Q-6	A B	Attempt all questions Explain theory of NMR and principle of NMR spectroscopy in detail Explain Sample preparation and detection in IR spectroscopy	(14) 7 7
Q-7	A B	Attempt all questions Explain Raman spectroscopy in detail Explain FTIR in detail	(14) 7 7
Q-8	A B	Attempt all questions Write down applications of AAS Write down application of IR spectroscopy	(14) 7 7