

Enrollment No: _____ Exam Seat No: _____

C.U.SHAH UNIVERSITY

Summer Examination-2017

Subject Name : Instrumental Methods of Analysis - I

Subject Code : 4LS03IMA1/4SC03IMA1

Branch : B.Sc.(Microbiology)

Semester : 3

Date :27/03/2017

Time : 10:30 To 01:30

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) Define absorption spectroscopy	1
	b) Explain Molar absorption coefficient.	1
	c) Calculate the molar absorption coefficient using following data. The absorbance of 6×10^{-4} M solution is 0.60, the path length of the cuvette is 1 cm.	1
	d) What is full form of NMR?	1
	e) What is Principle of UV-Vis spectroscopy?	1
	f) Explain difference between Raman spectroscopy and IR spectroscopy.	1
	g) What are ranges of IR radiations?	1
	h) Write principle of Lambert law.	1
	i) Write the basic principle of NMR.	1
	j) Draw schematic diagram of UV visible spectroscopy	1
	k) What is photometry?	1
	l) Define absorbance.	1
	m) Define transmittance	1
	n) What is basic difference in FAS and AAS ?	1

Attempt any four questions from Q-2 to Q-8

Q-2	Attempt all questions	(14)
A	Define Monochromator in UV Visible Spectroscopy.	7
B	Explain mechanism of Double Beam Splitter with diagram.	7
Q-3	Attempt all questions	(14)
A	Explain electromagnetic radiation with absorption and emission of light.	7
B	Write note on applications of UV Visible spectroscopy.	7
Q-4	Attempt all questions	(14)
A	Explain basic principles Absorption Spectroscopy	7



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

