C.U.SHAH UNIVERSITY **Summer Examination-2019**

Subject Name: Discipline Specific Elective-III (Instrumentation and Biotechniques)

	Subject	Code: 4SC06IAB1	Branch: B.Sc (Microbiolo	gy)
	Semester	r: 6 Date: 30/04/2019	Time: 10:30 To 01:30	Marks: 70
	Instructio (1) (2) (3) (4) (4) (4) (5) (5) (5) (5) (5) (5) (5) (5) (5) (5	ons: Use of Programmable calculator & Instructions written on main answe Draw neat diagrams and figures (if Assume suitable data if needed.	any other electronic instrument is proper book are strictly to be obeyed. The necessary) at right places.	ohibited.
Q-1		Attempt the following question	IS:	(14)
Atte	a) b) c) d) e) f) g) h) i) j) k) l) m) m) mpt any f	What is function of β mercaptoet Write the equation of Numerical Define refractive index. Expand SEM Give the equation of R _f value. Expand the IEF. 	tion occurs in UV-Vis spectroscopy. grate towardselectrode. ense is 10X and objective lens is sed to visualize live cells. used to the surface view of an object gration is directly proportional to the sed on molecular weight. T/F 0. T/F	is 20X, the T/F current. T/F
Q-2	a) b)	Attempt all questions Explain the working principle of diagram of it depicting its function Write the principle of TLC. Expl compound by TLC.	of Confocal microscope. Also dravonal parts. lain its various components for separate	(14) w a labelled (7) ration of any (7)
Q-3	a) b)	Attempt all questions Discuss the principle of centrifug Explain the factors that affect sed Explain the working principle of point.	gation and derived the equation of ce dimentation rate in centrifugation f 2D PAGE with the help of isoelec	(14) entrifugation. (7) tric focusing (7)



Q-4	Attempt all questions					
	a)	Write in detail the principle, instrumentation and application of visible spectroscopy.	(7)			
	b)	b) Discuss in detail difference between chromatography and electrophoresis.				
Q-5		Attempt all questions				
	a)	Discuss in detail fluorescence microscopy with the help of ray diagram.				
	b)	What is density gradient centrifugation? Explain applications of centrifugation.	(7)			
Q-6		Attempt all questions				
	a)	Define the Beer –Lambert law and derive the equation of Beer-Lambert law including with advantage and disadvantages				
	b)	Write in detail the principle, instrumentation and application of Agarose gel electrophoresis.				
Q-7		Attempt all questions	(14)			
-	a)	Discuss the principle of Electrophoresis and derived the equation of electrophoresis. Explain the factors that affect its electrophoretic mobility.	(7)			
	b)	Discuss the principle, instrumentation and application of HPLC.	(7)			
Q-8		Attempt all questions	(14)			
-	a)	Explain the working mechanism of Gas Liquid Chromatography.	(7)			
	b)	What is SDS PAGE? Add a note on its working principles and significance.	(7)			

