## C. U. SHAH UNIVERSITY Winter Examination-2022

## Subject Name : Modern Separation Techniques

Subject Code : 5SC03MSC1		Branch: M.Sc. (Chemistry)	
Semester: 3	Date: 24/11/2022	Time: 11:00 To 02:00	Marks: 70

## **Instructions:**

- (1) Use of Programmable calculator and 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.

## **SECTION – I**

Q-1		Attempt the Following questions.	(07)
•	А.	Define chromatography	01
	B.	What do you mean by Soft Ionization Techniques?	01
	C.	Define hyphenated techniques	01
	D.	Give Van Deemter equation for GC.	01
	E.	What is WCOT?	01
	F.	Give the principle of GC.	01
	G.	What is called ionization techniques?	01
Q-2		Attempt all questions	(14)
-	Α	Explain Instrumentation of HPLC with proper diagram.	07
	В	Write a note on affinity chromatography.	07
		OR	
Q-2		Attempt all questions	(14)
-	А	Discuss the Quadrupole and Time of flight mass analyzer.	08
	В	Explain cation exchange chromatography.	06
Q-3		Attempt all questions	(14)
-	А	Explain Instrumentation of gas chromatography.	07
	В	Discuss headspace gas chromatography.	07
		OR	
Q-3		Attempt all questions	(14)
	А	Discuss the Electron capture and flame ionization detector used in GC.	08
	В	Write a note types of column used in GC.	06



		SECTION II		
Q-4		Attempt the Following questions.	(07)	
	A.	Define electrophoresis	01	
	В.	Give full form of SDS PAGE.	01	
	C.	Give principle of counter current chromatography.	01	
	D.	Define isoelectric point.	01	
	E.	Give the name of technique that can be used to separate neutral molecules.	01	
	F.	Define Micelles.	01	
	G.	Define the term electro osmotic flow	01	
Q-5		Attempt all questions	(14)	
•	А	Write a note on principle and separation mechanism of electrophoresis.	07	
	В	Explain capillary zone electrophoresis.	07	
		OR		
Q-5		Attempt all questions	(14)	
	Α	Write a note on Counter Current Chromatography.	07	
	В	Discuss the Superheated Water Chromatography.	07	
Q-6		Attempt all questions	(14)	
-	А	Explain Micellar Electro-kinetic Electrophoresis.	07	
	В	Write a note on Flash Chromatography.	07	
		OR		
Q-6		Attempt all Questions		
	А	Discuss the SDS-PAGE Chromatography.	07	
	В	Discuss separation of proteins on the basis of their isoelectric point.	07	

