Enrollment No: _____ Exam Seat No: _____

C. U. SHAH UNIVERSITY

Summer Examination-2022

Subject Name: Analytical Chemistry-I

Subject Code: 5SC01ACH1 **Branch: M.Sc. (Chemistry)**

Semester: 1 **Date: 26/04/2022** **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)**
	A)	Define food analysis	**01**
	B)	What do you mean by spectroscopy?	**01**
	C)	What is known as electromagnetic spectrum?	**01**
	D)	Define analytical chemistry	**01**
	E)	Give any one use of gamma radiation.	**01**
	F)	What do you mean by volumetric analysis?	**01**
	G)	Define the term calibration	**01**
Q-2		**Attempt all questions**	**(14)**
	A)	Discuss the classical and instrumental techniques in detail.	**07**
	B)	Explain various wavelength-selecting devices in detail.	**07**
		OR	
Q-2		**Attempt all questions**	**(14)**
	A)	Discuss the purposes and methods of calibration.	**07**
	B)	Write a note on single and double beam spectrophotometers.	**07**
Q-3		**Attempt all questions**	**(14)**
	A)	Explain Beer-Lambert's law.	**05**
	B)	Discuss the Kjeldahl method in detail.	**05**
	C)	Explain the Ultraviolet absorption method for analysis of protein.	**04**
		OR	
		Attempt all questions	
Q-3	**A)**	Explain the analysis of potassium by flame photometry.	**05**
	B)	Discuss the Karl Fischer titration method in detail.	**05**
	C)	Write a note on preparation of food sample.	**04**

SECTION – II

Q-4		**Attempt the Following questions**	**(07)**
	A)	How many Grams of $KMnO_4$ is required to prepare 500mL solution-having concentration of 0.5N?	**01**
	B)	Write equation of molarity.	**01**
	C)	Define the term: titration	**01**
	D)	What is called complexometric titration?	**01**
	E)	Give any two applications of atomic absorption spectroscopy.	**01**
	F)	What do you mean by standardization?	**01**
	G)	Give the name of any one indicator used in neutralization titration.	**01**
Q-5		**Attempt all questions**	**(14)**
	A)	Discuss the precipitation titration.	**05**
	B)	Explain the solubility product.	**05**
	C)	Give the applications of fluorimetry and phosphorimetery.	**04**
		OR	
Q-5		**Attempt all questions**	
	A)	Explain the instrumentation of turbidimetry.	**05**
	B)	Discuss the Jablonski diagram.	**05**
	C)	Write a note on common ion effect.	**04**
Q-6		**Attempt all questions**	**(14)**
	A)	Explain the type of errors and methods for minimization of errors.	**07**
	B)	Discuss the primary and secondary standards with example.	**07**
		OR	
Q-6		**Attempt all Questions**	
	A)	Discuss the instrumentation and working of atomic absorption spectroscopy.	**07**
	B)	Explain the principle, instrumentation and applications of nephelometry.	**07**