C. U. SHAH UNIVERSITY
Winter Examination-2022

Subject Name : Analytical Chemistry-II

Subject Code : 4SC05ACH1   **Branch: B.Sc. (Chemistry)**

Semester : 5   **Date : 25/11/2022**   **Time : 02:30 To 05:30**   **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 errors	01
	b)	What is called precision?	01
	c)	Give formula for T test.	01
	d)	Define the term: Solubility	01
	e)	What do you mean by Saturated solution?	01
	f)	Give statement of Grotthuss Draper law.	01
	g)	What is range?	01
	h)	Define titration	01
	i)	Give the name of different types of Titration.	01
	j)	Write Ohm's Law.	01
	k)	Define specific resistance and specific conductance	01
	l)	What is primary standard?	01
	m)	Define conductance	01
	n)	Give the Nernst Equation.	01

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

Q-2		**Attempt all questions**	**(14)**
	A	Discuss the types of errors in detail.	**07**
	B	Explain ways to minimize errors in experiment.	**07**

Q-3		**Attempt all questions**	**(14)**
	A	Explain in detail the Separation of Cl^-, Br^- and I^- ions.	**04**
	B	Derive and explain Beer-Lambert's Law.	**10**

Q-4		**Attempt all questions**	**(14)**
	A	Explain Q test? Give Q test for below set of observations. 106, 103, 104, 107 and 114 ($Q_{Cal.} = 0.76$).	**07**

B	Calculate the Mean Deviation, Standard Deviation, Coefficient of Variation and Relative Mean Deviation for the following given set of data: 48.32, 48.36, 48.23, 48.11 and 48.38.	**07**

Q-5   **Attempt all questions**   **(14)**
A   Write a note on Separation of NO_2^-, NO_3^- and Br- ions.   **07**
B   Explain lack of absorbance by product and reagent with diagram.   **07**

Q-6   **Attempt all questions**   **(14)**
A   Discuss the Ostwald's indicator theory.   **07**
B   Explain Redox titration with one example.   **07**

Q-7   **Attempt all questions**   **(14)**
A   What is hydrolysis constant and degree of hydrolysis? Explain and derive it's formula.   **10**
B   Discuss Conductometric Titration curve for strong acid and strong base with proper example.   **04**

Q-8   **Attempt all questions**   **(14)**
A   Discuss Mohr's method of precipitation Titration.   **07**
B   Explain Conductometric Titration curve for precipitation Titration with proper example.   **07**