

C.U.SHAH UNIVERSITY

Winter Examination-2018

Subject Name : Analytical Chemistry-II

Subject Code : 4SC05ACH1

Branch: B.Sc. (Chemistry)

Semester : 5 Date : 05/12/2018 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) What do you mean by qualitative analysis?	01
	b) Give the wavelength range of visible region of spectroscopy.	01
	c) Define titration	01
	d) What is called specific conductance?	01
	e) Define indicator	01
	f) States the Kohlrausch law	01
	g) Find the molarity and normality of 500mL solution containing 200gm of KMnO_4 .	01
	h) Define absolute error	01
	i) What is Coefficient of variance (C.V.)? Give equation for finding C.V.	01
	j) What do you mean by equivalent conductance?	01
	k) Define redox titration?	01
	l) How many significant figures are there in 0.00345, 234.00 and 20.0022?	01
	m) Find the mean and median for the given set of data: 23.5, 23.7, 23.3, 23.0 and 23.8.	01
	n) What is end point in titration?	01

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

Q-2	Attempt all questions	(14)
	a) Discuss the determinate and indeterminate errors in detail.	07
	b) Derive the Lambert-Beer's Law and give its applications.	07
Q-3	Attempt all questions	(14)
	a) Explain Ostwald's theory regarding acid-base indicator.	07
	b) Define standard and give its types with example and also give characteristics of primary standard.	07



- Q-4** **Attempt all questions** **(14)**
- a) The data obtained by analyzing compound X as 48.32 %, 48.36 %, 48.23%, 48.11% and 48.38%. Calculate the median value, mean value, relative average deviation and standard deviation. **05**
 - b) Discuss the methods for the separation of Cl^- , Br^- & I^- . **05**
 - c) Explain the iodometry and iodimetry titration. **04**
- Q-5** **Attempt all questions** **(14)**
- a) What is argentometric titration? Explain the Fajan's method for argentometric titration. **07**
 - b) Write a note on external and internal indicators. **07**
- Q-6** **Attempt all questions** **(14)**
- a) Explain various types of acid-base titrations with curve. **07**
 - b) Explain the precipitation titration of AgNO_3 vs. NaCl and BaCl_2 vs. K_2SO_4 by conductometrically. **07**
- Q-7** **Attempt all questions** **(14)**
- a) Write a note on degree of hydrolysis and hydrolysis constant. **07**
 - b) Define cell constant, derive equation for cell constant and give its importance. **07**
- Q-8** **Attempt all questions** **(14)**
- a) Explain the importance of conductivity electrodes and platinisation of electrodes. **05**
 - b) Explain the methods for minimization of errors. **05**
 - c) From the following four sets of chloride analyses on separate aliquots of a pooled serum were reported: 103, 106, 107 and 114meq/L. One value appears suspect. Determine if it can be ascribed due to accidental error at 95% confidence level. Apply the Q test (90% confidence) to determine whether the suspected value retained or rejected. (Q_{tab} value at 90% and 95% confidence level are 0.765 and 0.829 respectively). **04**

