

# C.U.SHAH UNIVERSITY

## Summer Examination-2018

Subject Name: Analytical Chemistry-I

Subject Code: 4SC05CHC4

Branch: B.Sc. (Chemistry)

Semester: 5

Date: 31/03/2018

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 is specific rotation?                      **(1)**
  - b) Define *Kahlrausch law*                      **(1)**
  - c) Define precision                      **(1)**
  - d) What is error?                      **(1)**
  - e) Define *Grothus Drapper law*                      **(1)**
  - f) Define saturated compounds.                      **(1)**
  - g) How much amount of  $H_2SO_4$  in gms will be there in 38% w/w 40 gm  $H_2SO_4$  solution?                      **(1)**
  - h) Define molality                      **(1)**
  - i) Define Accuracy                      **(1)**
  - j) Give the merits of strong indicators.                      **(1)**
  - k) Define wavelegth                      **(1)**
  - l) Give the names of redox indicators.                      **(1)**
  - m) Give any two characteristics of the substance used as secondary standard.                      **(1)**
  - n) Give the difference between repeatability.                      **(1)**

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

- Q-2**                      **Attempt all questions**                      **(14)**
- A. Discuss the Iodimetry & Iodometry titration.                      **(7)**
  - B. Derive and explain *Lambert-Beer's law*.                      **(7)**
- Q-3**                      **Attempt all questions**                      **(14)**
- A. Write the methods for the separation of halogen compounds.                      **(7)**
  - B. Define equivalent conductance? Discuss effect of dilution on conductance.                      **(7)**
- Q-4**                      **Attempt all questions**                      **(14)**
- A. Discuss the nature of acid-base conductometric curve for the strong acid with strong base and weak acid with strong base.                      **(7)**
  - B. Discuss *Volhard* method for the precipitation titration.                      **(7)**



- Q-5**                    **Attempt all questions**                    **(14)**
- A.** Discuss *Fajan's* method for the precipitation titration.                    **(5)**
  - B.** Explain neutralization titration of strong acid and strong base with diagram.                    **(5)**
  - C.** Discuss internal redox indicator                    **(4)**
- Q-6**                    **Attempt all questions**                    **(14)**
- A.** Discuss the shape of the precipitation titration curve of NaCl by AgNO<sub>3</sub>.                    **(7)**
  - B.** Write the applications of conductance measurement                    **(7)**
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- Q-7**                    **Attempt all questions**                    **(14)**
- A.** Discuss the absorbance by reactants and reagent explains with proper diagram.                    **(7)**
  - B.** Discuss methodic errors and additive errors.                    **(7)**
- Q-8**                    **Attempt all questions**                    **(14)**
- A.** Discuss the steps for minimization of errors? Explain methods.                    **(7)**
  - B.** Write a notes on 1.End point 2. Equivalence point.                    **(7)**

