2021
B.A. /B.Sc. Part III General Examination
University of Calcutta
CHEMISTRY
Paper IVB
F.M. 25
Time: 2hrs.

FAKIR CHAND COLLEGE CENTRE(551)

[Use A4 pages and black ink only for writing answers. Write Roll number and Registration number at the top and page number at the bottom of each page. Scan you admit card and make a single pdf file with the answer script.]

1. Determine titrimetrically the solubility of a (1:1) sparingly soluble salt (at 28^0C) from the data given below. Write the theory of this method (as per following points only). Represent the supplied data twice in proper tabular forms with suitable heading and calculate the result accordingly. Show the required calculations for all the cases.   25

   a) Theory: (8)
      i) Define solubility.
      ii) How solubility depends on temperature?

   b) Write down two separate tables for NaOH standardization and sparingly soluble salt solution titrations. Represent the data twice for two consecutive titrations in each table with proper format along with suitable Table heading and necessary units.   (3+3)

   c) Calculation.   (3+3)

   d) Result: Determine the solubility of the salt in both normality and moles/litre unit. (5)

   Given:
      i.   Strength of the standard Oxalic Acid Solution = $(^N/_{20})$
      ii. Volume of Oxalic Acid solution taken = 10 ml
      iii. Volume of sparingly soluble salt solution taken = 10 ml
      iv. Volume of NaOH solution required during standardizations of it with the standard Oxalic Acid solution (Two titrations) =10.4ml, 10.4 ml
      v.   Volume of NaOH solution required during titrations of the sparingly soluble salt solution (Two titrations)=8.4ml, 8.4 ml