

Con. 5832-12.

(REVISED COURSE)

CN-4933

(2 Hours)

[Total Marks : 40]

- N.B. (1) Question No.1 is compulsory.
 (2) Attempt any three question of the remaining.
 (3) Draw diagrams wherever necessary.

Q. No.1.

- A) Explain the following terms (Any Four) 4
 (i) Chelate (ii) Masking (iii) Limit test (iv) Titrant (v) Protophilic solvent
 B) Give role of following; 4
 (i) Sulphuric acid in permanganometry.
 (ii) Dioxane in non-aqueous titration
 (iii) Na_2CO_3 in preparation of $\text{Na}_2\text{S}_2\text{O}_3$ solution
 (iv) KCN in limit test of Lead
 C) Calculate the weight of *disodium edetate dehydrate* required to prepare 500ml of 0.05 M solution. 2

Q. No.2.

- A) Predict the nature of the titration curve of a strong acid vs. a strong base (pH Vs. Volume of titrant). Explain how such titration curve helps to select a suitable indicator(s) for the same. 4
 B) Give an account of estimation of Oxygen using Hempel apparatus. 4
 C) Distinguish between primary and secondary standard. 2

Q. No.3.

- A) For the following solutes, suggest suitable method of estimation. 4
 (i) Ammonium acetate (ii) Aspirin
 B) 10ml aliquot of a chloride solution is treated with 15ml of standard 0.1182M AgNO_3 solution. The excess AgNO_3 is titrated against 0.101 M NH_4SCN requiring 2.38ml to reach the end point. Calculate the concentration of chloride in the solution. 4
 C) Balance the following reactions. 2
 (i) $\text{MnO}_4^- + \text{H}_2\text{O}_2 \rightarrow \text{Mn}^{2+} + \text{O}_2 + \text{H}_2\text{O}$
 (ii) $\text{IO}_3^- + \text{I}^- \rightarrow \text{I}_2$

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Q. No.4.

A) What is meant by "Limit test for non-specific impurities". Discuss any two. 4

B) Write a note on cerimetry with a mention of indicator used. 4

C) Match the following. 2

(i) Methyl red (ii) Fluorescein (iii) Ferroin (iv) Xylenol orange

Vs.

(a) Adsorbed and free forms have different colors (b) Reduced and oxidized forms have different colors (c) Ionized and non-ionized forms have different colors (d) Complexed and free forms have different colors

Q. No.5.

A) Write short note (Any Two); 8

(i) Arsenic limit test

(ii) Ash value

(iii) Resonance theory of indicators

B) What is an amphoprotic solvent? Discuss leveling effect. 2
