CHEMISTRY — HONOURS — PRACTICAL

2021

Subject-CEMA, SEM-I

Paper- CC-1P

Time: 2 Hrs   **Full Marks: 30**

INORGANIC CHEMISTRY (Marks 20)

The figures in the margin indicate full marks.

1. For the estimation of the quantity of Fe^{III} and Cu^{II} present in a mixture in g/L:

(a) Write down the principle of estimation mentioning all the equations involved and derive the working formula.   7

(b) Using the following data calculate the strength of ~ (N/20) $Na_2S_2O_3$ solution.

(i) 0.6237 *g* of $K_2Cr_2O_7$ has been accurately weighed, transferred to a 250 mL volumetric flask and volume is made up with distilled water.

(ii) Standardization of $Na_2S_2O_3$ by standard $K_2Cr_2O_7$ solution.   2+2

No. of	Volume of std. $K_2Cr_2O_7$	Burette Reading of $Na_2S_2O_3$ soln (mL)			
Titrations	taken (mL)	Initial	Final	Difference	Most frequent reading
1.	25	0	25.4	25.4	
2.	25	0	25.4	25.4	25.4
3.	25	0	25.3	25.3	

(c) Using the above data, calculate the amount of Fe^{III} and Cu^{II} present in a mixture in g/L using the following specimen results.   3+3

PTO

(i) Table for estimation of Cu^{II}:

No. of Titrations	Volume of Stock solution taken (mL)	Burette Reading of $Na_2S_2O_3$ soln (mL)			
		Initial	Final	Difference	Most frequent reading
1.	25	0	31.2	31.2	
2.	25	0	31.3	31.3	31.2
3.	25	0	31.2	31.2	

(ii) Table for estimation of Fe^{III}:

No. of Titrations	Volume of Stock solution taken (mL)	Burette Reading of $K_2Cr_2O_7$ soln (mL)		
		Initial	Final	Difference
1.	25	0	28.4	28.4

2. **Laboratory Note Book:** 3

ORGANIC CHEMISTRY (IA)

(Marks : 10)

3. You are given a 1:1 mixture of two pure solids, (a) Benzoic acid and (b) Anthracene.

How would you separate them into two pure components using their solubility in different solvents only?

Describe the procedure of separation and give reasons for the choice of solvent.

(a) Choice of solvent

(b) Procedure of separation

(c) Explanation. 2+4+4