

U.G. 3rd Semester Examination - 2022

CHEMISTRY

[HONOURS]

Course Code : CHEM-H-CC-P-05

[PRACTICAL]

Full Marks : 20

Time : 2 Hours

The figures in the right-hand margin indicate marks.

1. Perform any **one** of the following experiments allotted by lottery. Short procedures of the experiments are supplied herewith: 10
 - a) Determine partition coefficient (K_d) for the distribution of I_2 between water and $CHCl_3$.
 - b) Determine the viscosity of the supplied solution (marked 'V') using an Ostwald's viscometer at room temperature.
 - c) Determine the strength of given NaOH solution conductometrically.
2. Laboratory notebook. 5
3. Viva voce. 5

[Turn over]

(Short Procedures for experiments)

1a. Experiment : Partition coefficient measurement

i) Prepare set as given below:

Set No	Volume of supplied solution of Iodine in $CHCl_3$ (ml)	Volume of $CHCl_3$ (ml)	Volume of Water(ml)
1	30	10	110

- ii) For titration from $CHCl_3$ layer pipette out 5ml from the layer and titrate with $\sim 0.1(N)$ thiosulphate solution. Take 25ml from aqueous and titrate with $\sim 0.01(N)$ thiosulphate solution.
- iii) Calculate K_d from the above data.

1b. Experiment : Viscosity measurement

- i) Add 10 ml water in the wider limb of Ostwald Viscometer using a 10 ml pipette and allow it to run between two specific marks. Note the time of flow. After removing the water completely, add 10 ml of the experimental liquid with pipette; repeat the procedure and note the time of flow;

- ii) Determine the specific gravity of the experimental liquid at room temperature.
- iii) Calculate the viscosity of the unknown solution from in η/η_w .

1c. Experiment : Conductometric titration.

- i) Prepare 100ml 0.05(N) Oxalic acid.
 - ii) Titrate 10 ml of the supplied solution of NaOH with Oxalic acid conductometrically.
 - iii) Take at least five readings before and after the equivalence point of each titration.
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