

U.G. 2nd Semester Examination - 2021

CHEMISTRY

[HONOURS]

Course Code : CHEM-H-CC-P-03

[PRACTICAL]

Full Marks : 20

Time : 2 Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

Group-A (Inorganic Chemistry)

1. Answer any **one** from the following: 10×1=10

- a) What do you mean by iodometric and iodimetric estimations? Write all the reactions involved for the estimation of Cu(II) solution by $\text{Na}_2\text{S}_2\text{O}_3$ solution by iodometric method. Write the structural formula of $\text{S}_2\text{O}_3^{2-}$ and $\text{Cr}_2\text{O}_7^{2-}$. What is starch? (1+1)+4+(1+1)+2=10
- b) What do you mean by primary standard solution? Give example. What is equivalent weight? Is equivalent weight constant for a particular substance? Justify your answer. During

[Turn Over]

standardization of KMnO_4 solution by standard oxalic acid solution, the oxalic acid solution is required to be heated nearly to 70-80 °C, why? Write the reactions involved for the estimation of Fe(III) solution by $\text{K}_2\text{Cr}_2\text{O}_7$.

(1+1)+(1+1)+2+4=10

Group-B (Physical Chemistry)

2. Answer any **one** from the following: 10×1=10

- a) Write down the principle of the study of Kinetics of decomposition of H_2O_2 . What are the factors on which the rate of reaction depends? Why do we use ice-water in the experiment of acid catalysed hydrolysis of ester? What is threshold energy? 4+2+2+2=10
- b) Explain how the rate constant of a reaction vary with temperature. What is pseudo first order reaction? Give an example. Is the rate constant of acid catalysed hydrolysis of methyl acetate constant at a particular temperature? What do you mean by '2 vol' H_2O_2 ? 3+3+2+2=10
