

B.Sc. 2nd Semester (Honours) Practical Examinations, 2020-2021

CHEMISTRY

Course Code: UG/CHEM/201/C-3 Course Title: Inorganic Chemistry-I (P3)

Time: 2 Hours

Full Marks: 15

The figures in the right-hand side margin indicate full marks. Candidates are required to give their answers in their own words as far as practicable

Answer any three questions:

5 x 3 = 15

- (a) In an oxidation-reduction titration why KMnO_4 cannot be used as a primary standard?

(b) What is Zimmermann-Reinhardt solution and what role each of its component plays during the estimation of Fe(III) using standardized KMnO_4 solution? 2 + 3 = 5
- (a) Describe the theory behind the estimation of Sodium salt of carbonate and hydroxide present in a mixture with relevant chemical reactions.

(b) Mention the indicators which can be used for this titration and the reason behind their choice. 4 + 1 = 5
- (a) Explain why do we generally choose Barium diphenylamine sulphonate (BaDS) indicator during the titration with $\text{K}_2\text{Cr}_2\text{O}_7$ solution?

(b) How can we estimate the Fe(II) content in Mohr's salt using standard $\text{K}_2\text{Cr}_2\text{O}_7$ solution? 2 + 3 = 5
- (a) Calculate the amount (in grams) of KMnO_4 needed to prepare 0.1 (N) 1 litre solution of it. Provide the necessary explanation and reaction.

(b) Which one is stronger oxidant among KMnO_4 and $\text{K}_2\text{Cr}_2\text{O}_7$ and why?

(c) Give the relevant reactions involved in the estimation of Oxalic acid using standardized KMnO_4 solution. 1 + 2 + 2 = 5

