

**Gurudas College**  
**B.Sc. General Examination, 2020**  
**Semester-I**  
**Subject-CEMG**  
**Paper-CC1/GE1 (Practical)**

**Time: 2 h**

**Full marks: 30**

Answer any **TEN** questions

Each question carries **Three** marks

1. Write down the chemical reaction involved in titrimetric analysis of strength of  $\text{KMnO}_4$  against standard oxalic acid solution and their equivalent formula.
2. What are primary standard reagents? Give example.
3. Give an example of autocatalytic reaction.
4. Write down the chemical formula of Mohr's salt. Is it a complex salt or double salt?
5. 22 g of Mohr's salt solution was dissolved in 1000 mL of water. 25 mL of this solution was titrated against 0.055 (N)  $\text{KMnO}_4$  solution and the titre value was found 25.5 mL. Find out the number of water of crystallization present in Mohr's salt. (Given  $M_{\text{Fe}} = 56$ )
6. Name the indicators used in estimation of  $\text{Na}_2\text{CO}_3$  and  $\text{NaHCO}_3$  in a mixture using HCl solution. Mention their colour change in acid and alkaline medium.
7. What weight of  $\text{K}_2\text{Cr}_2\text{O}_7$  is required to prepare 250 mL (N/20) solution?
8. 25 mL  $\text{Na}_2\text{CO}_3$  solution is titrated with 0.05(N) HCl solution using phenolphthalein as indicator. The volume of HCl solution required at the end point is found to be 9.0 mL. Calculate the concentration of  $\text{Na}_2\text{CO}_3$  solution in  $\text{g L}^{-1}$ .
9. Write down the chemical reaction involved in the estimation of Cu(II) using standardized  $\text{Na}_2\text{S}_2\text{O}_3$  solution as titrant.
10. How do you estimate Fe(II) in presence of Fe(III) in a mixture? Explain briefly.
11. During the standardization of  $\text{Na}_2\text{S}_2\text{O}_3$  solution with supplied standard (N/20)  $\text{K}_2\text{Cr}_2\text{O}_7$  solution, the volume required of  $\text{K}_2\text{Cr}_2\text{O}_7$  is 24.5 mL. Calculate the strength of  $\text{Na}_2\text{S}_2\text{O}_3$  solution in normality. Given, volume of  $\text{Na}_2\text{S}_2\text{O}_3$  taken = 25 mL.
12. Name one indicator of each used in dichromometry and iodometry.
13. In permanganometry no indicator is used. – why?
14. How would you estimate Fe(III) dichromometrically?
15. During the estimation of oxalic acid by  $\text{KMnO}_4$ , the temp. of the reaction medium is adjusted to 70-80 °C. – explain why?