Gurudas College

B.Sc. General Examination, 2020
Semester-V
Subject-CEMG
Paper-DSE-A-2 (Practical)

Time: 2 h **Full marks**: **30**

Answer any ***TEN*** questions

Each question carries ***Three*** marks

1. What is Z-R reagent? Explain its uses.
2. Write down the chemical reaction involved in the estimation of Fe(III) in Portland cement.
3. E° value of the Cu^{2+}/Cu^{+} redox couple (+0.15 V) is lower than that of the I_2/I^- redox couple (+0.53 volt). Cu^{2+} as such contrary to the expectation, Cu^{2+} quantitatively oxidize iodide ion to liberate iodine in the estimation of Cu iodometrically. Explain why?
4. Starch should be added towards the end point – why?
5. What do you mean by iodometry?
6. Write down the chemical reaction involved in estimation of Cu using $N_2S_2O_3$ as titrant.
7. Write down the approximate composition of brass and its dissolution process.
8. During the standardization of $Na_2S_2O_3$ using 25 mL of 0.05 (N) $K_2Cr_2O_7$, the volume of the titrant consumed is 26 mL. Calculate the strength of $Na_2S_2O_3$ in normality.
9. What are the constituents of Portland cement? How it could be brought into solution?
10. Address briefly the principle of estimation of Zn in brass.
11. What do you mean by complexometry? Give an example.
12. Draw a structure of any chelate complex.
13. Give full names of: (i) EDTA & (ii) EBT.
14. Write the complexation of EDTA and indicator with metal by a single equation.
15. Write the pHs at which the complexometric titration of Mg(II) and Ca(II) takes place. Write the change in colour at the end point of the complexometric titration of Mg(II) using EDTA and EBT indicator.