A . Answer all the questions each carry 4 marks.   **10X4=40**

1. What is the function of both $SnCl_2$ and $HgCl_2$ in the estimation of Fe ? Why is $HgCl_2$ to be added once at a time?

2 .What weight of $K_2Cr_2O_7$ is required to prepare 350 ml (N/7) solution , show with details calculations ? What is Zimmermann – Reinhardt solution ?

3. Why is $KMnO_4$ not used as a Primary Standard ? How does it's reduction potential falls with decrease in H^+ conc. ? In permanganometry no indicator is used .why?

4. 10 ml of (N) Na_2CO_3 requires for neutralisation 10 ml (N) HCl in presence of methyl orange but requires 5 ml of (N) HCl in presence of phenolphthalein – why?

5. How do you prepare 2000ml of 2(N) H_2SO_4 from conc. H_2SO_4 ? Show by calculation ? Why is H_3PO_4 used in Fe estimation?

 6. Why in the titration of Oxalic acid with $KMnO_4$ pink colour disappears slowly at the beginning but rapidly afterwards? Why is the titrarion carried out in the hot condition ?

7. 25 ml Mohr's Salt required 33.46 ml 1.006 (N/10) $K_2Cr_2O_7$ for standardisation. Calculate the amount of Iron in 1000 ml Mohr's Salt.

 Starch should be added towards the end point and it should not be used in strong acid solution – why?

8. The standard reduction potential of Cu^{2+}/Cu^+ is lower than that of I_2/I^- , yet Cu is estimated iodometrically . How this becomes possible ? Explain with probable equations.

9. Why is ammonium thiocyanate added towards the end - point in the iodometric estimation of Cu? What are the equivalent weights of KIO_3 and $KBrO_3$ in acid medium ? Show with probable equation.

10. Why is H_3PO_4 or F^- added prior to the start of the titration of Fe^{2+} with $Cr_2O_7^{2-}$ in presence BaDS indicator? Write the full name and structural formula of BaDS .

B.Viva Voice.   **20**