

Saint Fateh Singh Convent School, Maur Mandi

Class – 10+2

Sub – Chemistry

Viva Question

Q1. What is a standard solution?

Ans. A solution whose strength is KMnO_4 is called a standard solution.

Q2. What is a normal solution?

Ans. A solution containing one gram equivalent a normal solution.

Q3. What is equivalent mass of known when it acts as oxidizing agent in acidic medium?

Ans. KMnO_4 loses $5e^-$ per molecule

$$\text{Equ. Mass} = \frac{\text{MOL.mass}}{5} = \frac{158}{5} = 31.6$$

Q4. Is sodium hydroxide a Primary standard?

Ans. No

Q5. Are molality and molarity same?

Ans. No, Molality is defined as number of moles of solute present in 1000 gram of solvent where as molarity is no of moles of solute Present in 1L of solution

Q6. What is relationship between Normality and Molarity?

Ans. Normality = Molarity x Acidity or Basicity

Q7. Define Acidity and Basicity.

Ans. Acidity is no. of OH^- given by substance where as Basicity is defined no. of H^+ given by substance.

Q8. What is the equivalent mass of H_2SO_4

Ans. Equ. Mass = $\frac{98}{2} = 49$

Q9. What is titration?

Ans. The Process of adding one solution from burette to another in conical flask in order to complete chemical reaction involved is known as titration.

Q10. What is principle of volumetric analysis?

Ans. In volumetric analysis, concentration of solution is determined by allowing a known volume of solution to react, quantitatively with another solution of known concentration

Q11. What is indicator?

Ans. Indicator is chemical substance which changes colour at the end Point.

Q12. What is end Point?

Ans. The stage during titration at which reaction is just complete is known as end point

Q13. What are Primary and secondary standard resitance?

Ans. Secondary standard solution is chemical term that refers to solution that has its concentration measured by titration with primary standby solution

Eg:- NaoH where as solution whose concentration does not change is Primary standard whose concentration does not change is primary standard solution

Q14. What is indicator used in KMnO_4 titration?

Ans. No Indicator because KMnO_4 acts as self-Indicator.

Q15. Why does KMnO_4 act itself as an indicator?

Ans. IN presence of dil KMnO_4 reacts with reducing agent (oxalic acid or Mohr's salt) when all the reducing agent has been oxidized, the excess of KMnO_4 is not decomposed and imparts pink colour to solution.

Q16. What is end Point in KMnO_4 solution?

Ans. Colourless to light pink.

Q17. Why should we heat oxalic acid solution to about $60-70^\circ\text{C}$ before titration with KMnO_4 ?

Ans. Oxalic acid is heated to speed up liberation of Mn^{2+} one which then auto catalyses the reacton and this reaction proceeds reaction which otherwise does not allow reaction to go completion.

Q18. Why is dilute H_2SO_4 added while preparing standard Mohr's Salt solution?

Ans. It is added to prevent hydrolysis of ferrous salts.

Q19. Can you use Hcl or HNO_3 in KMnO_4 titrations? Why

Ans. No, HNO_3 itself is an oxidizing agent whereas Hcl being oxidisable to chlorine and Hydrogen consumes permanganate

Q20. What is oxidation number of Mn in KMnO_4 ?

Ans:- +7

Q21. What happens if we heat oxalic acid above 100°C?

Ans. It decomposes oxalic acid into CO_2 and CO

Q22. Should a titration flask be rinsed?

Ans. No. Rinsing of flask will increase the volume more than pipette one

Q23. What is the formula of Potash Alum and Mohr's Salt?

Ans. Potash Alum:- $\text{K}_2\text{SO}_4 \cdot \text{Al}_2(\text{SO}_4)_3 \cdot 24\text{H}_2\text{O}$

Mohr's Salt:- $(\text{NH}_4)_2\text{SO}_4 \cdot \text{FeSO}_4 \cdot 6\text{H}_2\text{O}$

Q24. What is a radical?

Ans. A radical may be defined as an atom or group of atoms which carry charge.

Q25. What are preliminary tests?

Ans. Physical examination of salt i.e. the tests which are done for getting an indication of radicals are called preliminary tests.

Q26. Name a few preliminary tests?

Ans. Dry heating, physical examination of salt, action of dilute and concentrated H_2SO_4

Q27. Which radicals are absent in white salt?

Ans. Cu^{2+} , Fe^{2+} , Fe^{3+} , Ni^{2+} , Co^{2+}

Q28. Black precipitates in Group IV indicate which cation?

Ans. If H_2S is not boiled off, group IV cation will also get precipitated

Q29. Why is it essential to boil off H_2S gas before precipitating III group?

Ans. Presence of either Ni^{2+} or Co^{2+}

Q30. What is an acidic or basic radical?

Ans. An acidic radical is an anion left after removal of hydrogen atom from acid whereas basic radicals are ions formed after removal of OH^- from base. It is usually a cation

Acidic Radical $\rightarrow \text{SO}_4^{2-}$ Basic radical = NH_4^+

