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Answer All Questions

1. What is a replacement reaction? To prepare 100 mL 5% NaOH solution, how much NaOH is needed? **(2 marks)**

2. Write the mechanism for the synthesis of 2-naphthol aniline dye (rose red colour). **(2 marks)**

3. What happens when acetaldehyde is treated with iodine and 5% NaOH? (Mention the change of color, odor, state, etc.) **(2 marks)**

4. What happens when aniline is treated with sodium nitrite and HCl? (Mention the change of color, odor, state etc.) **(2 marks)**

5. What is the use of antacid? Give one example, **(1 mark)**

6. Choose Primary and Secondary Standards from the following: KHP, NaOH, HCl, Oxalic acid. **(1 mark)**

7. 1.575 g of oxalic acid $(COOH)_2 \cdot xH_2O$ are dissolved in water and the volume is made up to 250 mL. On titration 16.68 mL of this solution requires 25 mL of 0.66 N NaOH solution for complete neutralisation. Calculate "x"? (3 marks)

8. While measuring the phosphoric acid strength in the cola experiment, while plotting pH vs volume of NaOH, how many saturation points are expected? How many did you observe in your experiment? Explain with the graph. (2 marks)

9. What is a BTB indicator? Why does it change color in the basic conditions? Write the structure. (2 marks)

10. You have used an indicator in the laboratory for the Ca estimation in milk. (a) Write the name and color of the indicator. (b) Write the chemical structure and color of the complex between the indicator and Ca. (b) Write one alternative indicator that can be used for the complexometric titration of Ca. (3 marks)

11. Why NH_4Cl was used to prepare zinc acetate solution for the standardization of EDTA? (1 mark)