B.Sc II Yr (IV Semester) Chemistry Practical Examination

Paper IV- Quantitative analysis – II

Objective type Question Bank

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1. What are Complexometric titrations?
2. Write the structure of EDTA?
3. Give an example for Complexometric titrations?
4. Why Buffer solution is added in Complexometric titrations?
5. Give an example for Basic buffer solution?
6. What is meant by Back titration?
7. Name any two Complexometric indicators?
8. Which indicator is used in the estimation of Nickel (II) by EDTA?
9. What is meant by Conductometric titration?
10. In Conductometric titration, only AC source is used and not DC source. Why?
11. What is degree of dissociation?
12. Define strong electrolyte?
13. Define weak electrolyte?
14. What is cell constant?
15. What are the units of cell constant?
16. Why conductance of HCl solution decreases on the addition of NaOH solution?
17. What is kohlrausch's law?
18. Why conductance of 0.1M acetic acid is less than that of 0.1M HCl solution?
19. Define specific conductance?
20. What are the units of specific conductance?
21. Write the relation between conductance and specific conductance?
22. What is equivalent conductance?
23. What are the units of equivalent conductance?
24. How are specific conductance and equivalent conductance related?
25. In 0.1M HCl and 0.1M NaOH, which solution has higher conductance?
26. Why conductance of CH_3COOH solution increases on the addition of NaOH solution?

27. The specific conductance of 0.01N KCl solution is 1.0×10^{-3} $Ohm^{-1}.cm^{-1}$ at 20^{o} C. Calculate the equivalent conductance?
28. What is meant by Potentiometric titration?
29. Define EMF?
30. Write the Nernst equation of electrode potential?
31. What is standard electrode potential?
32. Define a reference electrode?
33. Define reduction potential?
34. What are the electrodes are used in the Potentiometric titration of an acid solution with NaOH solution?
35. How do you set up Quinhydrone electrode?
36. What is Quinhydrone?
37. What is the composition of Calomel electrode?
38. What is Calomel?
39. Write the electrode reactions of Calomel electrode?
40. Write the Nernst equation of electrode potential for Quinhydrone electrode?
41. Write the notation of Quinhydrone electrode?
42. Write the notation of Calomel electrode?
43. What is the reduction potential of saturated Calomel electrode at 25^{o}C?
44. What is glass electrode?
45. What is Gravimetric analysis?
46. Define co-precipitation?
47. Define post-precipitation?
48. How do you ensure complete precipitation of analyte in Gravimetric analysis?
49. What is the precipitate formed in the estimation of Barium in Gravimetric analysis?
50. What is the purpose of digesting a precipitate?
51. What filter paper is used in Gravimetric analysis?
52. What is the role of policemen rod in Gravimetric analysis?

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EXPERIMENT QUESTIONS

1. Estimate the amount of HCl present in the given solution **Conductometrically**.You are provided with approximately 0.4 M NaOH solution.
2. Estimate the amount of NaOH present in the given solution **Conductometrically**.You are provided with approximately 0.1 M HCl solution.
3. Estimate the amount of CH_3COOH present in the given solution **Conductometrically**.You are provided with approximately 0.4 M NaOH solution.
4. Estimate the amount of NaOH present in the given solution **Conductometrically**.You are provided with approximately 0.1M CH_3COOH solution.
5. Estimate the amount of HCl present in the given solution **Potentiometrically**.You are provided with approximately 0.2 M NaOH solution.
6. Estimate the amount of NaOH present in the given solution **Potentiometrically**.You are provided with approximately 0.1 M HCl solution
7. Estimate the amount of CH_3COOH present in the given solution **Potentiometrically**.You are provided with approximately 0.2 M NaOH solution.
8. Estimate the amount of NaOH present in the given solution **Potentiometrically**.You are provided with approximately 0.1M CH_3COOH solution.
9. Estimate the amount of Nickel (II) present in the given solution by Back titration **Complexometrically**. You are provided with approximately 0.01M EDTA and 0.01M $MgSO_4$ solutions.
10. Estimate the amount of Barium (II) present in the given solution by **Gravimetric analysis**.

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Scheme of Evaluation

Experiment : **15 Marks** (Conducting experiment and Tabulation - 06 marks, Graph - 06 marks, Calculation and Result-03 marks)

Objective type questions : **05 Marks** (10 questions, each ½ mark)

Record : **05 Marks**

TOTAL : **25 Marks**

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