

12th Chemistry Important Guess Questions

1. Define the following terms:
 - (i) Molarity (M)
 - (ii) Normality (N)
 - (iii) Molality (m)
 - (iv) Mole fraction (x)
2. Define Raoult's law for volatile and non-volatile solute.
3. Differentiate between ideal and non-ideal solution.
4. What are colligative properties?
 - (i) What is elevation in boiling point, and how is molecular mass of a non-volatile solute determined from it?
 - (ii) What is osmotic pressure, and how is molecular mass of a non-volatile solute determined from it?
5. What are azeotropes or azeotropic mixtures?
6. What is abnormal molecular mass? Van't Hoff factor.
7. Define conductance (G), conductivity (K), and molar conductivity (Λ_m).
8. Kohlrausch's law and its applications.
9. Galvanic cell (working and construction).
10. Nernst equation.
11. Faraday's laws of electrolysis.
12. Corrosion - an electrochemical phenomenon. Explain.
13. Define rate of reaction:
 - (i) What are the types of rate of reaction?
 - (ii) What are the units of rate of reaction?
14. What are the factors that affect the rate of reaction?
15. Difference between order and molecularity of a reaction.
16. Write the units of rate constant of zero, first, and second-order reactions.
17. Derive the integrated rate expression of zero and first-order reactions and write their half-lives.
18. What is the effect of temperature on the rate of reaction?
19. Derive Arrhenius equation.
20. Explain Finkelstein and Swarts reactions.

21. SN1S_N1 and SN2S_N2 reaction mechanisms.
22. Why haloarenes do not show SN1S_N1 and SN2S_N2 mechanisms?
23. Discuss electrophilic substitution reactions of haloarenes.
24. Explain the following:
 - (i) Wurtz reaction
 - (ii) Fittig reaction
 - (iii) Wurtz-Fittig reaction
25. Uses of DDT, Chloroform, and Iodoform.
26. Preparation of Phenols:
 - (i) From Arene diazonium salts
 - (ii) From Chloroarenes (Dow's Process)
27. Write short notes on:
 - (i) Kolbe's reaction
 - (ii) Reimer-Tiemann reaction
28. Why are phenols more acidic than alcohols?
29. Discuss nitration and bromination of phenol.
30. Explain Williamson's synthesis.
31. How can you differentiate primary, secondary, and tertiary alcohols?
32. Define esterification.
33. Discuss the mechanism of dehydration of alcohols.
34. Electronic configuration of first transition series and transition elements.
35. Preparation and oxidizing character of KMnO_4 .
36. Lanthanoid contraction and its consequences.
37. Paramagnetism and colored nature in compounds of transition elements. Explain.
38. Preparation of aldehydes and ketones by:
 - (i) Oxidation of alcohols
 - (ii) Ozonolysis of alkenes
39. Illustrate the following reactions with examples:
 - (i) Wolff-Kishner reduction
 - (ii) Aldol condensation
 - (iii) Clemmensen's reduction
 - (iv) Cannizzaro's reaction
40. Hell-Volhard-Zelinsky reaction (HVZ Reaction).

41. How can you differentiate aldehydes and ketones?
42. Give preparations of carboxylic acids.
43. Give three preparations of amines.
44. Discuss basic properties of primary, secondary, and tertiary amines in aqueous medium.
45. How can you differentiate between primary, secondary, and tertiary amines (Hinsberg Test)?
46. Classification of amines.
47. Explain the following:
 - (i) Hoffmann Bromamide Degradation Reaction.
 - (ii) Gabriel Phthalimide Synthesis.
 - (iii) Carbylamine Reaction
48. What is Diazotization?
49. Properties of Diazonium salts:
50. Discuss electrophilic substitutions reactions of aniline:
 - (i) Bromination
 - (ii) Nitration
51. Ligands and classification of ligands.
52. Nomenclature of coordination compounds:
53. Werner's theory:
54. Isomerism in coordination compounds:
 - (i) Linkage isomerism
 - (ii) Ionization isomerism
 - (iii) Hydration isomerism
55. Cyclic structure of glucose (Haworth structures)
56. Define briefly:
 - (i) Maltose
 - (ii) Lactose
 - (iii) Sucrose
57. Proteins (Structure) and Amino acids
58. What are Vitamins and how they are classified?
59. What is the difference between DNA and RNA?
60. Give three chemical properties of Glucose