

**Sample Question Paper
Class-XII
Chemistry**

Time allowed: 3 Hours

M.M.70

All Questions are compulsory.

Q.No. 1 to 8 carry 1 mark each.

Q.No.9 to 18 carry 2 marks each.

Q.No. 19 to 27 carry 3 marks each.

Q.No.28 to 30 carry 5 marks each.

Use log table, if necessary.

- Q.1. What is the structural difference between DNA and RNA?
- Q.2. What is the relationship between rate constant and activation energy of reaction?
- Q.3. Write the formula of Potassium trioxalatochromate (III).
- Q.4. Write reaction of copper with hot and concentrated sulphuric acid ?
- Q.5. Write IUPAC name of PhCOPh.
- Q.6. Why does PCl_3 fume in moisture?
- Q.7. Name the dispersion medium and dispersed phase present in milk?
- Q.8. Why is sulphuric acid not used during the reaction of alcohols with KI?
- Q.9. An element X has bcc lattice with unit cell is 288 pm and density 7.2 g per cu cm. Calculate its atomic mass?
- Q.10. Complete the reaction
 (a) $\text{C}_6\text{H}_5\text{N}_2\text{Cl} + \text{H}_3\text{PO}_2 + \text{H}_2\text{O} \rightarrow$
 (b) $\text{C}_6\text{H}_5\text{N}_2\text{Cl} + \text{C}_2\text{H}_5\text{OH} \rightarrow$
- Q.11. The treatment of alkyl halide with aqueous KOH lead to the formation of alcohol but in the presence of alcoholic KOH give alkene. Explain why?
- Q.12. What is crystal field splitting energy? How does the magnitude of Δ_0 decide the actual configuration of d orbitals in a coordination entity?
- Q.13. (a) What is molecularity of reactions?
 (b) Define order of reaction.
- Q.14. Why are electric conductivity of metals decreases with rise in temperature?
- Q.15. (a) Write Faraday second law of electrolysis.
 (b) What is the emf of cell when cell reaction attain equilibrium?
- Q.16. Arrange $\text{C}_2\text{H}_5\text{NH}_2$, $(\text{C}_2\text{H}_5)_2\text{NH}$, $(\text{C}_2\text{H}_5)_3\text{N}$, NH_3 in decreasing order of their basic character.
- Q.17. How will you convert the following?
 (a) But-1-ene to But-2-ene
 (b) Ethanol to ethyl fluoride
- Q.18. The rate constant for a first order reaction is 60 s^{-1} How much time will it take to reduce the initial concentration to its $1/16^{\text{th}}$ value?
- Q.19. Explain the following
 (a) Zeta potential
 (b) Sorption

- (c) Peptisation
- Q.20. (a) What is the role of graphite rods in metallurgy of aluminium?
 (b) State principles of (i) Chromatography (ii) Zone refining method
- Q.21. (a) Name two toxic gases prepared from chlorine.
 (b) Draw structure of (i) XeO_3 (ii) H_2SO_3
- Q.22. Define with examples (i) Antiseptics (ii) Narcotic analgesics (iii) Antifertility drugs
- Q.23. (a) What is the significance of 6,6 in Nylon-6,6 ?
 (b) Name the monomers present in (i) Bakelite (ii) Neoprene
- Q.24. (a) What is essential and non essential amino acid. Give one example of each.
 (b) What are the expected products of hydrolysis of lactose?
- Q.25. (a) Why does O_3 act as powerful oxidizing agent?
 (b) Why is CN^- exists but CP^- does not?
 (c) Why does $\text{R}_3\text{P}=\text{O}$ exists but $\text{R}_3\text{N}=\text{O}$ does not?
- Q.26. Corrosion of copper, silver and rusting of iron are very common. Both cause enormous damage. Rusting of iron in particular result in the loss of crores of rupees every year. Major accident occur because of this.
 (a) What is the chemical formula of rust?
 (b) Why do silver article become black when exposed to air for a long time?
 (c) Suggest two ways to check rusting of iron.
- Q.27. (a) Explain dehydration of alcohol to give ether with mechanism?
 (b) Explain why ortho nitrophenol more acidic than ortho methoxyphenol?
- Q.28. (a) What is the effect of increasing pH on $\text{K}_2\text{Cr}_2\text{O}_7$ solution?
 (b) Why do actinoids show more numbers of oxidation states than lanthanoids?
 (c) Why are transition elements act as good catalysts?
 (d) Why is Cu^+ unstable in aqueous solution?
 (e) Complete the reaction $\text{Cr}_2\text{O}_7^{2-} + \text{NO}_3^- \rightarrow$
 Or
 (a) Why are transition elements paramagnetic ?
 (b) Calculate spin only magnetic moment for M^{2+} ($Z=25$)
 (c) What is lanthanoids contraction?
 (d) The chemistry of actinoids element is not so smooth as that of the lanthanoids. Justify.
 (e) Complete the reaction $\text{MnO}_4^- + \text{Fe}^{2+} \rightarrow$
- Q.29. (a) Why does vapour pressure of liquid decrease when a non-volatile solute is added into it?
 (b) What is reverse osmosis?
 (c) Which has higher concentration 1M or 1m solution and why?
 Or
 (a) What does $i < 1$ indicates?
 (b) Why is boiling point of water increases on addition of sodium chloride in it?
 (c) What happen to RBC when they are put in (i) 0.5% NaCl Solution (ii) 1% NaCl solution
- Q.30. (a) How will you convert the following
 (i) Benzoic acid to Benzaldehyde
 (ii) Benzaldehyde to Benzophenone
 (b) How will you distinguish between Pentan-2-one and Pentan-3-one
 (c) Write short note on (i) Rosenmund reduction (ii) Aldol condensation

Or

- (a) Give reason
- Cyclohexanone forms cyanohydrins in good yield but 2,2,6-trimethylcyclohexanone does not.
 - There are two -NH_2 groups in semicarbazide. However, only one is involved in the formation of semicarbazones.
- (b) An organic compound contains 69.77% carbon, 11.63% hydrogen and rest oxygen. The molecular mass of the compound is 86. It does not reduce Tollens' reagent but forms an addition compound with sodium hydrogensulphite and give positive iodoform test. On vigorous oxidation it gives ethanoic and propanoic acid. Write the possible structure of the compound.

TIPS AND SUGGESTIONS:

- Stictly follow N.C.E.R.T.books.
- Write and practice chemical equations as well as organic conversions again and again.
- Must practice N.C.E.R.T exercise and intext questions.

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