

SECOND REVISION TEST - 2024

STANDARD - XII

CHEMISTRY

Reg No.

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Time : 3.00 Hrs

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PART - I

Choose the correct answer:

- Which of the following is paramagnetic in nature?  
a)  $[\text{Zn}(\text{NH}_3)_4]^{2+}$       b)  $[\text{Co}(\text{NH}_3)_6]^{3+}$       c)  $[\text{Ni}(\text{CN})_4]^{2-}$       d)  $[\text{Ni}(\text{H}_2\text{O})]^{2+}$
- Crystal field stabilization energy for high spin  $d^6$  octahedral complex is  
a) 0      b)  $2(P + \Delta_0)$       c)  $-0.6 \Delta_0$       d)  $2(P - \Delta_0)$
- The sum of primary valency and secondary valency of the metal M in the complex  $(\text{M}(\text{en})_2(\text{OX}))\text{Cl}$  is  
a) 3      b) 6      c) -3      d) 9
- The number of electrons that have a total charge of 9650 coulombs is  
a)  $6.022 \times 10^{-34}$       b)  $6.022 \times 10^{24}$       c)  $6.022 \times 10^{22}$       d)  $6.022 \times 10^{23}$
- A certain current liberated 0.504gm of hydrogen in 2 hours. How many grams of copper liberated by the same current flowing for the same time in a copper sulphate solution  
a) 7.5      b) 63.5      c) 15.8      d) 31.75
- The shape of  $\text{As}_2\text{S}_3$  colloidal particle is  
a) Rod      b) Disc      c) Spherical      d) None of these
- Which of the following is positively charged colloid?  
a) Haemoglobin      b) Clay      c) Starch      d) Arsenic sulphide
- Benzene diazonium chloride on reduction with ethyl alcohol gives  
a) phenol      b) chlorobenzene      c) toluene      d) benzene
- Which one of the following will not undergo Hoffmann bromamide reaction?  
a)  $\text{CH}_3\text{CONH}_2$       b)  $\text{C}_6\text{H}_5\text{CONH}_2$       c)  $\text{CH}_3\text{CH}_2\text{CONH}_2$       d)  $\text{CH}_3\text{CONHCH}_3$
- Which of the following reagent can be used to convert nitrobenzene to aniline?  
a)  $\text{ZnHg}/\text{NaOH}$       b)  $\text{LiAlH}_4$       c)  $\text{Sn}/\text{HCl}$       d) All of these
- Which of the following are epimers  
a) D(+) - Glucose and D(+) Galactose      b) D(+) Glucose and D(+) - Mannose  
c) Neither 'a' or 'b'      d) Both 'a' and 'b'
- Insulin, a hormone chemically is  
a) Fat      b) Steroid      c) Protein      d) Carbohydrates
- In a protein, various amino acid linked together by  
a) Dative bond      b)  $\alpha$  - Glycosidic bond  
c) Peptide bond      d)  $\beta$  - Glycosidic bond
- Terylene is an example of  
a) polyamide      b) polysaccharide      c) polyester      d) polythene
- An example of antifertility drug is  
a) salvarsan      b) chloramphenicol      c) novestrol      d) seldane

PART - II

6 X 2 =

Answer any six questions. Question No. 24 is compulsory:

- Define oxidation number.
- Define crystal field stabilisation energy.
- Define anode and cathode.
- What is peptisation?
- What are promoters?
- What is tautomerism?

17. Write a note on Fisher tropoch synthesis.
18. Write the reaction of chlorine with excess ammonia.
19. Write notes on impurity defect.
20. Define rate law.
21. Define ionic product of water.
22. How will you prepare phenol from benzene?
23. Write perkin's reaction.
24. Convert Glycol  $\longrightarrow$ , formaldehyde.

**SECTION - III**

**6 X 3 = 18**

III. Answer any six questions. Question No. 33 is compulsory:

25. Why do transition element form complexes?
26. Explain oxidising and bleaching action of chlorine with one example.
27. Complete the reactions.
  - i)  $\text{HCOOH} + \text{H}_2\text{SO}_4 \longrightarrow$
  - ii)  $\text{H}_2\text{B}_4\text{O}_7 \xrightarrow{\text{Red hot}}$
  - iii)  $\text{B}_2\text{H}_6 + 2\text{NaOH} + 2\text{H}_2\text{O} \longrightarrow$
28. Derive integrated rate law for a first order reaction.
29. Derive an expression for the hydrolysis of constant and degree of hydrolysis of salt of strong base and weak acid.
30. Explain saytzeff's rule.
31. Write the mechanism of Cannizaro's reaction.
32. What is the action of HCN on
  - i) propanone
  - ii) 2,4 - dichlorobenzaldehyde
33. An atom crystallizes in fcc crystal lattice and has a density of  $10\text{gcm}^{-3}$  with unit cell edge length of 100pm. Calculate the number of atoms present in 1g of crystal.

**SECTION - IV**

IV. Answer all the questions:

**5 X 5 = 25**

34. a) Explain electrochemical extraction of aluminium. 3  
 b) Describe the role of Iodine in the refining of zirconium. (OR) 2  
 a) Write a note on zeolites. 3  
 b) Give the uses of borax. 2
5. a) Give a reason to support that  $\text{H}_2\text{SO}_4$  is a dehydrating agent. 2  
 b) Complete the reaction. i)  $\text{AgNO}_3 + \text{PH}_3 \longrightarrow$  2  
 ii) How will you prepare chlorine in the laboratory? 1  
 (OR) 2  
 a) Compare the ionisation enthalpies of first series of the transition elements. 3  
 b) Explain why  $\text{Cr}^{2+}$  is strongly reducing while  $\text{Mn}^{3+}$  is strongly oxidising. 2
16. a) Explain metal excess defect. 3  
 b) Calculate the number of atoms in a fcc unit cell. 2  
 (OR) 2  
 a) Write the differences between order and molecularity of a reaction. 3  
 b) Explain the effect of catalyst on reaction rate with an example. 2
7. a) Explain common ion effect with an example. 3  
 b) Calculate the pH of 0.04M  $\text{HNO}_3$  solution. 2  
 (OR) 2  
 a) What is glycerose? How is it prepared? 3  
 b) What is the reaction of diethyl ether with dil  $\text{H}_2\text{SO}_4$ ? 2
3. a) Write popoff's rule. 3  
 b) Write Benedict's solution test. 2  
 (OR) 3  
 a) Convert i) Carbondioxide  $\longrightarrow$ , acetic acid 2  
 ii) Toluene  $\longrightarrow$ , benzoic acid  
 iii) acetic acid  $\longrightarrow$ , monochloro acetic acid
- b) Write Rosenmund's reduction. 3