

**Tsi12Che Tenkasi District Common Examinations**  
**Common Second Mid Term Test - November 2022**



**Standard - 12**

**CHEMISTRY**

Time Allowed: 1.30 Hours

Maximum Marks: 35

**PART - I**

**I. Choose the most suitable answer from the given four alternatives:**

**10×1=10**

- The co-ordination number of Ni in the complex  $[\text{Ni}(\text{C}_2\text{O}_4)_3]^{4-}$  is  
 a) 3                                      b) 6                                      c) 4                                      d) 2
- The number of electrons delivered at the cathode during electrolysis by a current of 1A in 60 seconds is (charge of electron =  $1.6 \times 10^{-19}$  C)  
 a)  $6.22 \times 10^{23}$                                       b)  $6.022 \times 10^{20}$   
 c)  $3.75 \times 10^{20}$                                       d)  $7.48 \times 10^{23}$
- Which of the statements about electrolytic conductance is not true?  
 a) Conductivity increases with decrease in viscosity  
 b) Higher dielectric constant shows lower conductance in solution  
 c) Temperature increases, conductance also increases  
 d) Molar conductance increases with increase in dilution
- Collodion is a 4% solution of which one of the following compounds in alcohol-ether mixture?  
 a) Nitroglycerine                                      b) Cellulose acetate  
 c) Glycoldinitrate                                      d) Nitro cellulose
- The change of W/O emulsion into O/W emulsion is  
 a) coagulation                                      b) emulsification  
 c) de emulsification                                      d) inversion of phase
- Nitrobenzene on reaction with conc.  $\text{HNO}_3 / \text{H}_2\text{SO}_4$  at 80-100°C forms which one of the following products?  
 a) 1, 4 - dinitro benzene                                      b) 2, 4, 6 - trinitro benzene  
 c) 1, 2 - dinitro benzene                                      d) 1, 3 - dinitro benzene
- Assertion: Acetamide on reaction with KOH and bromine gives acetic acid.  
 Reason: Bromine catalyses hydrolysis of acetamide.  
 a) If both assertion and reason are true and reason is the correct explanation of assertion.  
 b) If both assertion and reason are true but reason is not the correct explanation of assertion.  
 c) Assertion is true, but reason is false.  
 d) Both assertion and reason are false.
- The central dogma of molecular genetics states that the genetic information flows from  
 a) Amino acids  $\rightarrow$  Protein  $\rightarrow$  DNA  
 b) DNA  $\rightarrow$  Carbohydrates  $\rightarrow$  Proteins  
 c) DNA  $\rightarrow$  RNA  $\rightarrow$  Proteins  
 d) DNA  $\rightarrow$  RNA  $\rightarrow$  Carbohydrates
- In aqueous solution of amino acids mostly exists in  
 a)  $\text{NH}_2 - \text{CH}(\text{R}) - \text{COOH}$                                       b)  $\text{NH}_2 - \text{CH}(\text{R}) - \text{COO}^-$   
 c)  $\text{H}_3\text{N}^+ - \text{CH}(\text{R}) - \text{COOH}$                                       d)  $\text{H}_3\text{N}^+ - \text{CH}(\text{R}) - \text{COO}^-$

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10. A mixture of chloroxylenol and terpineol acts as
- antiseptic
  - antipyretic
  - antibiotic
  - analgesic

## PART - II

II. Answer any 3 of the following: (Question Number 12 is compulsory)  $3 \times 2 = 6$

- Define Equivalent conductance.
- For the  $[\text{CoF}_6]^{3-}$  ion the mean pairing energy is found to be  $21000 \text{ cm}^{-1}$ . The magnitude of  $\Delta_0$  is  $13000 \text{ cm}^{-1}$ . Calculate the crystal field stabilisation energy (CFSE) for this complex ion corresponding to low spin and high spin states.
- What is Catalytic poison? Give example.
- Explain Libermann's nitroso test.
- How do antiseptics differ from disinfectants?

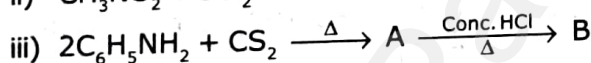
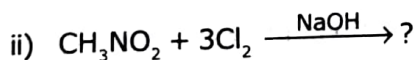
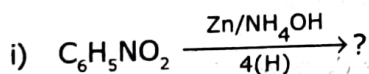
## PART - III

II. Answer any 3 of the following: (Question Number 20 is compulsory)  $3 \times 3 = 9$

16. Write the IUPAC names for the following complexes.

- $\text{Na}_2[\text{Ni}(\text{EDTA})]$
- $[\text{Ag}(\text{CN})_2]^-$
- $[\text{Co}(\text{ONO})(\text{NH}_3)_5]^{2+}$

- Explain the function of  $\text{H}_2$ - $\text{O}_2$  fuel cell.
- Write a note on formation of  $\alpha$ -helix.
- Write a note on Vulcanization of rubber.
- Complete the following chemical reaction.



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## PART - IV

 $2 \times 5 = 10$ 

IV. Answer all the questions:

- Based on VB theory explain why  $[\text{Cr}(\text{NH}_3)_6]^{3+}$  is paramagnetic, while  $[\text{Ni}(\text{CN})_4]^{2-}$  is diamagnetic. (2)
  - Derive Nernst equation. (3)

(OR)

- Write the special characteristics of enzyme catalysed reaction. (3)
  - Give the differences between DNA and RNA. (2)
- Write any two tests to identify the types of emulsion. (2)
    - How drugs are classified based on Pharmacological effect? (3)

(OR)

- Give a brief note on glycosidic bonding. (2)
- How will you prepare the following compounds from benzene diazonium chloride? (3)
  - Fluoro benzene
  - benzoic acid
  - Phenol