



22-11-2023

Standard 12CHEMISTRY

Time: 1.30 Hours

Marks: 35

**PART - I****I. Answer all the Questions.****7×1=7**

- Which kind of isomerism is possible for a complex  $[\text{Co}(\text{NH}_3)_4\text{Br}_2]\text{Cl}$ ?
  - geometrical and ionization
  - geometrical and optical
  - optical and ionization
  - geometrical only
- Among the following cells
  - Leclanche cell
  - Nickel - Cadmium cell
  - Lead storage battery
  - Mercury cells
 Primary cells are
  - I and IV
  - I and III
  - III and IV
  - II and III
- Adsorption of a gas on solid metal surface is spontaneous and exothermic, then
  - H increases
  - S increases
  - G increases
  - S decreases
- Which among the following does not affect adsorption.
  - surface area
  - Catalyst
  - temperature
  - pressure
- In aqueous solution of amino acids mostly exists in,
  - $\text{NH}_2\text{-CH(R)-COOH}$
  - $\text{NH}_2\text{-CH(R)-COO}^-$
  - $\text{H}_3\text{N}^+\text{-CH(R)-COOH}$
  - $\text{H}_3\text{N}^+\text{-CH(R)-COO}^-$
- D(+) glucose and -D(+) glucose are
  - Epimers
  - Anomers
  - Enantiomers
  - Conformational isomers
- Crystal field stabilization energy for high spin  $d^5$  Octahedral Complex is
  - $-0.6 \Delta_0$
  - 0
  - $2(P - \Delta_0)$
  - $2(P + \Delta_0)$

**Part - II****II. Answer any two of the following.****2×2=4**

- What is crystal field stabilisation energy?
- What is the role of salt bridge in Galvanic cell?
- What are active centres?
- What are hormones? Give examples.

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## Part - III

## III. Answer any three of the following. (17 is compulsory)

3x5=9

- 12) How double salts are differ from coordination compounds?
- 13) Write note on standard hydrogen electrode. (SHE)
- 14) State Faraday second law of electrolysis.
- 15) Differentiate physical and chemical adsorption
- 16) Write any four difference between DNA and RNA
- 17) An organic compound (A) on reduction gives compound(B), (B) on treatment with  $\text{CHCl}_3$  and alcoholic KOH gives. (C). (C) on catalytic reduction gives N-methyl aniline. Identify A, B, C and write its equation.

## Part - IV

## IV. Answer all of the following.

3x5=15

- 18) a) For the complex  $[\text{Fe}(\text{en})_2\text{Cl}_2]\text{Cl}_2$ . Identify.
- |                           |                       |
|---------------------------|-----------------------|
| a) Oxidation number of Fe | b) Hybridisation      |
| c) Shape                  | d) magnetic behaviour |
| e) IUPAC name             |                       |

(OR)

- b) i) What are hydrate isomers (2)
- ii) Write short note on Werner's theory. (3)

- 19) a) i) Define molar conductance (2)
- ii) Derive Nernst equation. (3)

(OR)

- b) i) Explain Brownian movement. (2)
- ii) Explain Adsorption theory. (3)

- 20) a) Write short note on
- i) Carbyl amine reaction
  - ii) Gabriel phthalimide synthesis.

(OR)

- b) Explain the structure of fructose.

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