

CBSE EXAMINATION PAPER-2022

CHEMISTRY

(Solved)

Time allowed : 3 hours

Maximum Marks : 6

General Instructions :

Read the following instructions carefully and follow them :

- i. This question paper contains **3 questions**. All questions are **compulsory**.
- ii. This question paper is divided into **2 sections**.
- iii. **Section A** – questions number **1 to 2** are short answer Each question carries **3 marks**.
- iv. **Section B** – questions number **3 to 3** are case based questions
- v. There is no overall choice given in the question paper. However, an internal choice has been provided in few questions.
- vi. Use of calculator is NOT allowed.

Section A

Question 1.

Write three differences between Physisorption and Chemisorption.

[3 Marks]

Question 2.

A compound 'A' on reduction with iron scrap and hydrochloric acid gives compound 'B' with molecular formula C_6H_7N . Compound 'B' on reaction with $CHCl_3$, and alcoholic KOH produces an obnoxious smell of carbilamine due to the formation of 'C'. Identify 'A', 'B' and 'C' and write the chemical reactions involved.

[3 Marks]

Section B

Question 3. Redox reactions are commonly known as reduction-oxidation reactions. They involve the transfer of electrons from one species to another. In a spontaneous reaction, energy is released which can be used to do work. The reaction is driven by two different containers and a voltaic Galvani cell is set up. In spontaneous redox reactions, a salt bridge connects the half-cells. The reading of the voltmeter gives the cell voltage or cell potential or electromotive force. If E_{cell} is positive the reaction is spontaneous and if negative the reaction is non-spontaneous and is referred to as an electrolytic cell.

Electrolysis refers to the decomposition of a substance by electric current. One mole of electric charge when passed through a cell will discharge half a mole of a divalent metal ion such as Cu. This was first formulated by Faraday in the form of laws of electrolysis. The conductance of a material is the property of allowing the flow of ions through itself and thus conducts electricity. Conductivity is represented by k and it depends upon the nature and concentration of ions, temperature, etc. A more common term, molar conductivity, refers to the conductance of the volume of solution containing one mole of electrolyte kept between two electrodes with the unit area of cross-section and standard unit length. Limiting molar conductivity of weak electrolytes cannot be ascertained.
