



B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL

MID-APRIL TEST 2025-26
CHEMISTRY

Class: XII
Date: 21.04.25
Admission no:

Time: 1hr
Max Marks: 25
Roll no:

General Instructions:

- (a) There are 12 questions in this question paper with internal choice.
- (b) SECTION A consists of 3 multiple -choice questions carrying 1 mark each.
- (c) SECTION B consists of 5 short answer questions carrying 2 marks each.
- (d) SECTION C consists of 4 short answer questions carrying 3 marks each.
- (e) All questions must be answered.
- (f) Use of log tables and calculators is not allowed.

SECTION A

1. Low concentration of oxygen in the blood and tissues of people living at high altitude is due to
- (a) low temperature. 1
 - (b) low atmospheric pressure.
 - (c) High atmospheric pressure.
 - (d) both low-temperature and high-pressure
2. Which one of the following electrolyte has the same value of the van't Hoff factor (i) as that of K_2SO_4 (if all are 100% ionised) 1
- (a) Na_2SO_4
 - (b) $K_3[Fe(CN)_6]$
 - (c) $Al(NO_3)_3$
 - (d) $K_4[Fe(CN)_6]$
3. An electrochemical cell generally consists of a cathode and an anode. Which of the following statements is correct with respect to the anode? 1
- (a) Oxidation occurs at the anode.
 - (b) Electrons move into the anode
 - (c) Usually denoted by a positive sign
 - (d) is usually made up of insulating material

SECTION B

4. Explain why the vapour pressure of aqueous solution glucose solution is lower than that of water. 2

5. Explain the terms ideal and non-ideal solution in terms of the force of interaction between the molecules. 2
6. Calculate the mole fraction of benzene in a solution containing 20% by mass in carbon tetrachloride. (C=12 H=1 Cl=35.5) 2
7. Explain the structure and function of the Electrochemical cell. 2
8. A Galvanic cell is made up of Zinc and Iron electrodes. Find the Cathode, anode, and reaction at the cathode and anode. 2

SECTION C

9. Explain the following phenomena with the help of Henry's law. 3
- (i) Painful condition known as bends.
- (ii) Feeling of weakness and discomfort in breathing at high altitude
10. What does positive and negative deviations from Raoult's law mean? Explain with the help of a diagram. 3
11. Define the following terms: 3
- (i) Mole fraction (ii) Molality (iii) Molarity
12. A voltaic cell is set up at 25°C with the following half cells: 3
- Zn/Zn^{2+} (0.01 M) and Cu/Cu^{2+} (0.001 M)
- Write an equation for the reaction that occurs when the cell generates an electric current and determine the cell potential. $E^0\text{Zn}^{2+}/\text{Zn} = -0.76\text{V}$ and $E^0\text{Cu}^{2+}/\text{Cu} = +0.34\text{V}$ (Log 10 =1)

*****End of the Paper*****