B K BIRLA CENTRE FOR EDUCATION
(Sarala Birla Group of Schools)

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SARALA BIRLA GROUP OF SCHOOLS
SENIOR SECONDARY CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL

PERIODIC-TEST-1 2025-26

CHEMISTRY (043)

Class : XII
Date : 30/06/2025
Admission No.:

Duration: 1 Hr
Max. Marks: 25
Roll No.:

General Instructions:

(1) There are 13 questions in all. All questions are compulsory.
(2) This question paper has three sections: Section A, Section B and Section C.
(3) All the sections are compulsory.
(4) Section A contains five questions of 1 mark each, Section B contains four questions of two marks each, Section C contains four questions of three marks each.
(5) There is no overall choice. Use of calculators is not allowed.

SECTION-A

1. In comparison to 1 M solution of glucose, the boiling point of 1 M NaCl solution is 1

(a) same (b) twice (c) three times (d) six times.

2. The molarity of 900 gram of water is 1

(a) 50 M (b) 55.50M (c) 5 M (d) cannot be calculated.

3. Four Faraday of electricity are passed through a solution of $ZnSO_4$. The mass of zinc deposited at the cathode is (atomic mass of Cu = 65 amu). 1

(a) 22 gram (b) 130 gram (c)6.5 gram (d) 65 gram.

4. In lead storage battery, the electrolyteH_2SO_4 1

(a) 38% (b) 48% (c) 32% (d) 80%

5. The unit of rate of reaction 1

(a) sec^{-1} (b) mol lit^{-1} sec^{-1} (c) lit mol^{-1} sec^{-1} (d) mol^2 lit sec.

SECTION - B

6. Define the following : 2
   (i) Order of a reaction
   (ii) molecularity of a reaction
7. How much charge is required for the following reductions: 2
   (a) 1 mol of Al^{3+} to Al? (b) 1 mol of Cu^{2+} to Cu ?
8. Given that the standard electrode potentials (E°) of metals are :
   K^+/K = -2.93 V, Ag^+/Ag = 0.80 V, Cu^{2+}/Cu = 0.34 V, Mg^{2+}/Mg = -2.37 V, Cr^{3+}/Cr = -0.74 V, Fe^{2+}/Fe = -0.44 V. Arrange these metals in increasing order of their reducing power. 2
9. Differentiate between molality and molarity of a solution. What is the effect of a change in the temperature of a solution on its molality and molarity? 2

SECTION C

10. What is meant by positive and negative deviation from Raoult's law? Explain with a graph. 3
11. (a) For a reaction A + B → P, the rate law is given by Rate = $k[A][B]^2$
    (i) How is the rate of reaction affected if the concentration of B is doubled? 3
    (b) A first-order reaction takes 30 minutes for 50% completion. Calculate the time required for 90% completion of this reaction.
12. (a) Draw the graph between Concentration and time for a zero-order reaction. 3
    (b) Explain the Rate Law expression.
13. Calculate the emf of the cell $Zn/Zn^{2+}(0.1M)$ II Cd^{2+} (0.01M)/Cd at 298K

    $E^0_{Zn^{2+}/Zn} = -0.76$ V, $E^0_{Cd^{2+}/Cd} = -0.40$ V 3

----------ALL THE BEST----------