

PVG's
Muktangan English School & Jr. College, Pune - 9
Unit Test - I (2024-25)
Standard - XII

Subject - CHEMISTRY
Date - 26-7-2024

Marks - 25
Time - 8.30 a.m. to 9.45 a.m.

- Instructions :
- 1) All sections are compulsory.
 - 2) Marks : Section A - 1 M each, Section B - 2 M each,
Section C - 3 M each, Section D - 4 M each
 - 3) Use of calculator is not allowed.
 - 4) Use of log table is allowed.

SECTION - A

Q.1 Select and write the correct answer.

[4M]

- i) of the following is n-type semiconductor.
- (a) Pure Si (b) Si doped with As
(c) Si doped with Ga (d) Ge doped with In
- ii) The unit cell of metallic silver is fcc. If the edge length is 2×10^{-10} cm, then radius of silver atom is
- (a) 0.707×10^{-10} cm (b) 2×10^{-10} cm
(c) 1×10^{-10} cm (d) 0.866×10^{-10} cm
- iii) is the chiral molecule from the following.
- (a) 1-Bromobutane (b) 1,1- Dibromobutane
(c) 2-Bromo-2-methylpropane (d) 2-Bromobutane
- iv) The reagent that will bring following conversion is
- $\text{CH}_3 - \text{CH} = \text{CH} - \text{CH}_2 - \text{CHO} \rightarrow \text{CH}_3 - \text{CH} = \text{CH} - \text{CH}_2 - \text{CH}_2\text{OH}$
- (a) H_2/Ni (b) $\text{LiAlH}_4, \text{H}_3\text{O}^+$
(c) KMnO_4 (d) H_2SO_4

Q.2 Answer the following.

[3M]

- i) State Henry's law.
- ii) What are benzylic halides ?
- iii) What are colligative properties ?

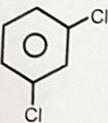
SECTION - B

Attempt any four.

- Q.3 Distinguish between S_N1 and S_N2 reaction. (any 4 points)
- Q.4 Derive the equation for determination of molar mass of solute from vapour pressure lowering.
- Q.5 Write a note on ionic solids.
- Q.6 A solution of citric acid $C_6H_8O_7$ in 50g of acetic acid has a boiling point elevation of 1.76K. If K_b for acetic acid is $3.07 \text{ K kg mol}^{-1}$ what is the molality of solution ?
- Q.7 Define : i) Isotonic solutions ii) Hypertonic solutions
- Q.8 What is Finkelstein reaction ?

SECTION - C

Attempt any two.

- Q.9 Write balanced chemical equations for the following conversions : [6]
- Phenol into cyclohexanol
 - Phenol into benzene
 - Anisole into phenol
- Q.10 Write the IUPAC name of following compounds.
- $CH_3 - CH = CH - CH_2 - OH$
 - $C_6H_5 - O - CH_3$
 - 
- Q.11 What is the action of following reagents on R-X ?
- Alc.KCN
 - Alc.NH₃
 - Aq. NaOH

SECTION - D

Attempt any one.

- Q.12 (i) In an ionic crystalline solid, atoms of element Y form hcp lattice. The atoms of element X occupy one third of tetrahedral voids. What is the formula of the compound ? [4M]
- (ii) Write a note on Schottky defect.
- Q.13 (i) Write the reactions involved in Dow process for the preparation of phenol.
- (ii) What is the action of following reagents on phenol ?
- Aq. Br₂
 - Br₂ in CS₂

