

Anjuman Islam Janjira Degree College of Science Murud-Janjira, Raigad-402401 Affiliated to University of Mumbai	
Class: -F.Y.B.Sc G.S	Subject: - Chemistry
Semester: - I Additional	Course code: - M3-1
Exam Event: - (FH) Summer 2025	Marks: - 30
Date: - 21/04/2025	Duration: - 01:00 Hours

- N.B: 1. **All** questions are compulsory.
2. **Figures** to the right indicate full marks.
3. Use of log-table/non programmable calculator is allowed.

Q.1. A) Select the correct option and complete the following sentences. (any four)

04

- Poise is the unit of
(a) viscosity (b) osmosis (c) diffusion
- When a student was given a viscometer, the liquid was sucked with difficulty, the liquid may be:
(a) benzene (b) glycerine (c) water
- The number of equivalents of the solute present in 1 dm^3 of the solution is called as its
(a) molarity (b) normality (c) molality
- Molality is represented by symbol
(a) m (b) M (c) N
- The rate of a reaction is expressed as $\text{rate} = k [\text{A}]^x [\text{B}]^y [\text{C}]^z$. The order of the reaction is
(a) xyz, (b) $x + y + z$ (c) $(x + y)/z$
- The number of molecules taking part in the step leading to the reaction called as
(a) order of reaction (b) atomicity of reaction (c) molecularity of reaction

Q.1.B) Attempt any two of the following.

06

- Define the following terms
i) relative viscosity ii) specific viscosity iii) reduced viscosity
- 20 g of glucose is dissolved in 150 g of water. Calculate the molality and mole fraction of glucose in the solution.
- Give the examples of first and second order reactions.

Q.2. A) Select the correct option and complete the following sentences. (any four)

04

- In ground state of an atom the electron occupies the----- energy orbitals available to them.
a) highest b) lowest c) middle
- Neutrons are ----- particles.
a) neutral b) positively charged c) negatively charged
- Orbitals are filled in order of increasing value of
a) $n + l$ b) $n - l$ c) n/l
- Elements of d-block are also called as
a) main group elements b) transition elements c) inner transition elements
- Ionization energy depends on
a) atomic radius b) nuclear charge c) both atomic radius & nuclear charge
- The correct order for the electron gain enthalpy for halogens is
a) $\text{Cl} > \text{Br} > \text{I}$ b) $\text{Cl} < \text{Br} < \text{I}$ c) $\text{Cl} < \text{Br} > \text{I}$

Q.2.B) Attempt any two of the following.

06

1. What are the postulates of Bohr's atomic model?
2. Write a note on atomic and ionic radii and their trend in periodic table.
3. What is ionization enthalpy? Explain the factors affecting ionization energy.

Q.3. A) Select the correct option and complete the following sentences. (any four)

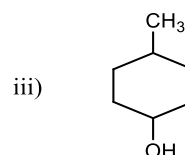
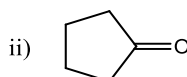
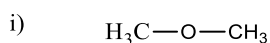
04

1. The IUPAC name of $\text{CH}_2=\text{CH}_2$ is
 - a) ethane
 - b) ethene
 - c) ethyne
2. The general formula for aliphatic alcohol is
 - a) R-Cl
 - b) R-OH
 - c) Ar-OH
3. Cycloalkane are
 - a) ethers
 - b) epoxides
 - c) cyclic alkanes
4. In Flying Wedge projection, a solid line represents
 - a) bond in the plane of paper
 - b) bond away from the observer
 - c) bond towards the observer
5. Diastereomers can be separated by
 - a) fractional crystallization method
 - b) column chromatography method
 - c) both a and b
6. The carbon atom with four different groups called as
 - a) chiral carbon
 - b) symmetric carbon
 - c) optically inactive carbon

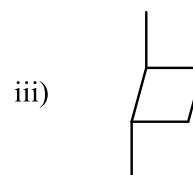
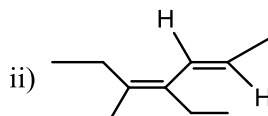
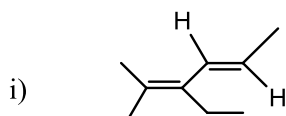
Q.3. B) Attempt any two of the following.

06

1. Assign the IUPAC nomenclature for the following molecules.



2. Assign E/Z nomenclature to the following molecules



3. Define stereochemistry and explain the term isomerism with suitable examples.