Anjuman Islam Janjira Degree College of Science Murud-Janjira, Raigad-402401 Affiliated to University of Mumbai	
Class: -F.Y.B. Sc GS	**Subject: - Major Chemistry – I**
Semester: - I Additional Exam	**Course code: - M3-1**
Exam Event: - Summer 2026 (FH)	**Marks: - 30**
Date: - 25/02/2026	**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.
4. Answer for the same question as far as possible should be written together.

Q1. A) Select the correct option and complete the following sentences. (any four) **04**

1. Viscosity is a ---------- property.
   a) additive b) constitutive c) colligative
2. The SI unit of viscosity is
   a) kg m^{-1} s^{-1} b) kg m^2 s c) kg m s^{-1}
3. A solution of accurately known concentration is called
   a) Standard solution b) secondary standard c) normal solution
4. The basicity of H_3PO_4 is
   a) 1 b) 2 c) 3
5. 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
6. For second order reaction half-time is ------ proportional to the initial concentration.
   a) directly b) not c) inversely

B) Attempt any two of the following. **06**

1. Explain the factors affecting the viscosity of liquid.
2. Determine the molarity of the following solutions which contain:
   a) 26.5 g of Na2CO3 in 500 ml solution. b) 16 gg of CH3OH in 200 ml solution
   c) 12 g of AlCl3.6H2O
   (Given: Atomic weights of H=1, C=12, O=16, Na=23, S=32, Al= 27)
3. Give the difference between molecularity and order of reaction.

Q2. A) Select the correct option and complete the following sentences. (any four) **04**

1. Alpha particles are -------- in charge.
   a) positive b) negative c) neutral
2. The nucleus of atom is composed of -------- particles.
   a) only protons b) only electrons c) protons ana neutrons
3. According to Modern Periodic Law the properties of elements are periodic functions of their
   a) atomic masses b) atomic numbers c) atomic densities
4. Elements of d-block are also called as
   a) main group elements b) transition elements c) inner transition elements
5. Half of the covalent bond length is known as
   a) covalent radius b) ionic radius c) Van-der Waals radius

6. With increase in atomic size, the enthalpy of ionization

a) decreases b) increase c) do not change

B) Attempt any two of the following. **06**

1. Give the assumptions of Bohr's theory.
2. Discuss long form of periodic table.
3. Define atomic and ionic radius. Explain different types of radii.

Q3. A) Select the correct option and complete the following sentences. (any four) **04**

1. The general formula for alkanes is

a) C_nH_{2n+2} b) C_nH_{2n} c) C_nH_{2n-2}

2. The IUPAC name of alkynes is obtained by replacing the suffix -ane of parent alkane by

a) -ene b) -yne c) -ol

3. Cycloalkanes are

a) cyclic alkenes b) cyclic alkynes c) cyclic alkanes

4. The functional group of carboxylic acid is

a) R-CHO b) R-COOH c) R-CO-R'

5. Stereochemistry deals with the-------- structure of molecules.

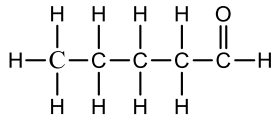
a) three-dimensional b) two-dimensional c) zero dimensional

6. The number of geometrical isomer present in molecule is given by formula

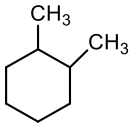
a) n+1 b)2n c) 2^n

B) Attempt any two of the following. **06**

1. Assign the IUPAC nomenclature for the following molecules.

i) 

ii) $H_3C-C\equiv C-CH_3$

iii) 

2. Write a note on geometrical isomerism with suitable example.
3. What is mean by projection formula? Explain Fischer projection formula with suitable example.