

NOTE: i) All the questions are compulsory.

ii) Figures to right indicate full marks.

iii) Use of non-programmable calculators/log table are allowed.

Q.1. Attempt any three:

[15]

- Give the postulates of kinetic theory of gases.
- Derive the Maxwell – Boltzmann distribution law of velocity.
- Write a short note on surface tension.
- Define viscosity. How to determine it with Ostwald's viscometer.
- Explain the deviation from ideal gases.
- State the three laws of symmetry.

Q.2. Attempt any three:

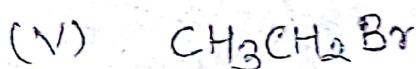
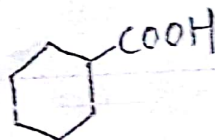
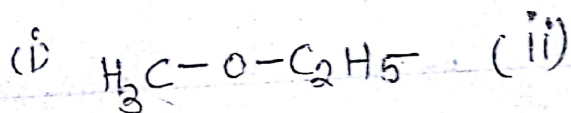
[15]

- Write the classification of elements on the basis of their electronic configuration.
- What is the scope of Inorganic chemistry?
- Write a note on common ion effect.
- Discuss the following terms:
 - Soil chemistry
 - Coordination chemistry
- Write down different types of the elements in the periodic table.
- Describe any two factors affecting precipitation.

Q.3. Attempt any three :

[15]

A) Give IUPAC name of the following



B) Write a short note on sp^3 hybridization of Carbon.

C) Distinguish between sigma bond and pi bond.

D) Write a short note on electromeric effect.

E) Write a short note on hyperconjugation.

F) Give the structure of following compound

i) Ethanoic anhydride

ii) Cyclohexanol

iii) Ethyl ethanoate

iv) 2-Chloro propanamine

v) Benzene

Q.4. Attempt any three:

[15]

A) Explain the following terms with suitable examples

i) Electronegativity

ii) Ionization potential.

B) Write down characteristics of crystalline solids and amorphous solid.

C) Write a short note on sp^2 hybridization of carbon.

D) Explain why anhydrous $CaCl_2$ is used as a drying agent.

E) How to measure surface tension with stalagmometer?

F) Give the functional group of the following :

i) Carboxylic acids

ii) Alcohol

iii) Aldehyde

iv) Amine

v) Cyanide.

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