

**PARUL UNIVERSITY**  
**FACULTY OF APPLIED SCIENCE**  
**B.Sc. Winter 2018-19 Examination**

**Semester: 1****Subject Code: 11100102****Subject Name: Chemistry-I****Date: 17/12/2018****Time: 10:30 am to 1:00 pm****Total Marks: 60****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1. A) Write Brief note on:- (Each of 04 marks) (08)**
- (a) Explain postulates of Bohr's Atomic Model.
  - (b) Write Note on Quantum Numbers.
- Q.1. B) Answer the following questions (Any two) (04)**
- (a) Answer the following:- (Each of 02 marks)
    1. Write Electronic configuration of Cu (29).
    2. Write Electronic Configuration of N (7).
  - (b) Write Short note on Inductive Effect. (04)
  - (c) Write Short note on Hydrogen Bond. (04)
- Q.2. A) Answer the following questions. (04)**
- (a) Fill in the blanks. (Each of 02 marks)
    1. Hybridization of Methane is -----
    2. A ----- Is an ion with positively charged carbon atom.
  - (b) Write Short note on Different Types of Isomerism. (04)
- Q.2. B) Answer the following questions (Any two) (03)**
- (a) Multiple choice questions. (Each of 01 marks)
    1. IUPAC Name of Formaldehyde is -----
      - a) Ethanal b) Methanal c) Propanal d) Butanal
    2. IUPAC Name of Acetylene is -----
      - a) Ethyne b) Methane c) Ethane d) Ethene
    3. An ----- carbon atom is a carbon atom that is attached to four different types of group of atom.
      - a) Asymmetric b) Symmetric c) Polar d) Non-Polar
  - (b) Write Short note on Diastereoisomers. (03)
  - (c) Write Short note on Enantiomers. (03)
- Q.3. A) Write Brief note on (Each of 04 marks) (08)**
- (a) Write Note on Kohlrausch law of independent migration of ions.
  - (b) Write Note on Phase Diagram of One- Component System – Water.
- Q.3. B) Answer the following questions (Any two) (04)**
- (a) Answer the following (Each of 02 marks)
    1. Define Stereoisomerism.
    2. Define Molar Conductance.
  - (b) Write Applications of Radioactive Isotopes. (04)
  - (c) State Law of decay of radioactivity & derive  $N = N_0 e^{-\lambda t}$  (04)
- Q.4. A) Answer the following questions. (04)**
- (a) Fill in the blanks. (Each of 02 marks)
    1. The number of components in water system is -----.
    2. If Half Life Period of Yttrium is 20 min, its decay constant is -----sec<sup>-1</sup>
  - (b) Difference between Configurational Isomers & Conformational Isomers. (04)
- Q.4. B) Answer the following questions (Any two) (03)**
- (a) Multiple choice questions (Each of 01 marks)
    1. Unit of Conductance is -----
      - a) Ohm b) mho c) ohm eq. d) cm
    2. Organic Compounds are generally compounds containing -----atom.
      - a) Carbon b) Chlorine c) Sulphur d) Nitrogen.
    3. ----- is a reagent attracted to electrons.
      - a) Electrophile b) Nucleophiles c) Isomers d) Carbocation
  - (b) State Phase Rule with formula. (03)
  - (c) Write Short note on Soddy Fajan's displacement law for radioactive element. (03)