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

Semester: 2   Date: 10/12/2018
Subject Code: 11100151   Time: 10:30 am to 1:00 pm
Subject Name: Chemistry II   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) Define Hybridization & Important features of Hybridisation.
    (b) Write Note on Born-Haber Cycle.

Q.1. B) Answer the following questions (Any two)
    (a) Write Short answers (Each of 02 marks)   **(04)**
        1. Write the Limitation of radius-ratio rule.
        2. What is bond energy,explain with example.
    (b) Write short note on Charge Transfer Complexes.   **(04)**
    (c) Write short note on Homolytic Bond Fission?   **(04)**

Q.2. A) Answer the following questions.
    (a) Write Short Answers (Each of 02 marks)   **(04)**
        1. What are Electrophiles with one example?
        2. What are Carbocations with one example?
    (b) Short note on Hydrogen Bonding.   **(04)**

Q.2. B) Answer the following questions (Any two)
    (a) Solve the Multiple choice questions.(Each of 01 marks)   **(03)**
        1. NH_3 is example of -----------.
        a) Electrophiles b)Nucleophiles c) both a& b d)None
        2. The smaller the bond length, -------is the bond energy.
        a)lower b)higher c) remains the same d)none
        3. Hydrogen bond is a very ------ bond in comparison with a covalent bond.
        a) weak b) strong c) both a & b d) None
    (b) Write short note on Bond length.   **(03)**
    (c) Write short note on Bond angles.   **(03)**

Q.3. A) Write Brief note on (Each of 04 marks)   **(08)**
    (a) Define Enantiomers & Explain the characteristics of Enantiomers?
    (b) Write Note on Optical Activity.

Q.3. B) Answer the following questions (Any two)
    (a) Do as directed (Each of 02 marks)   **(04)**
        1. Difference between Configuration & Conformation.
        2. What is Root mean square velocity with formula?
    (b) Write short note on Geometric Isomerism.   **(04)**
    (c) Write short note on Diastereomers.   **(04)**

Q.4. A) Answer the following questions.
    (a) Write Short answers (Each of 02 marks)   **(04)**
        1. What is Collision Number?
        2. Write Note on Stereogenic center?
    (b) Short note on Postulates on Kinetic Theory of Gases.   **(04)**

Q.4. B) Answer the following questions (Any two)
    (a) Solve the Multiple choice questions (Each of 01 marks)   **(03)**
        1.Preparation of chiral molecules from achiral molecules is called -------
        a)Symmetric synthesis b) Asymmetric synthesis c) both a& b d)None
        2. ----------is the necessary condition for optical isomerism to exist.
        a) Chirality b) Conformation c) Configuration d)None
        3. Which conformer of ethane has maximum energy?
        a) Skew b) Eclipsed c)Staggered d) All have equal energy
    (b) Derive the relationship between Vanderwaals constants & critical constant. **(03)**
    (c) Short note on Meso Compounds.   **(03)**