Seat No: _____ **Enrollment No: _____**

PARUL UNIVERSITY

FACULTY OF APPLIED SCIENCE

M.Sc. Summer 2018-19 Examination

Semester: 1 **Date: 02/04/2019**
Subject Code: 11205101 **Time: 10:30 am to 1.00 pm**
Subject Name: Organic Chemistry-1 **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 the term "Energy of activation" and "Transition state" with example.
(b) Explain anti- Markovnikov's Rule for reaction of HBr with Propene.

Q.1. B) Answer the following questions (Any two)
(a) Do as Directed (Each of 02 marks) **(04)**
1. Which one is more stable among 1^0, 2^0 and 3^0 carbocations?
2. Explain homolytic and heterolytic bond fission.
(b) What is Zaitsev's rule? **(04)**
(c) Explain hybridization and stability of carbanion. **(04)**

Q.2. A) Answer the following questions.
(a) Do as Directed (Each of 02 marks) **(04)**
1. Write the reaction for Propene with H_2O.
2. What are the different methods of generation of free radicals?
(b) Explain the effect of protic solvent on Nucleophilic substitution reactions. **(04)**

Q.2. B) Answer the following questions (Any two)
(a) Fill in the blanks. (Each of 01 marks) **(03)**
1. Transition state is formed in……..substitution reaction.
2. When the solvent acts as nucleophile in SN1 reaction, process is called as…….
3. Elimination reaction of Alcohols results in ……. formation.
(b) What are Carbenes? **(03)**
(c) Explain Taft equation. **(03)**

Q.3. A) Write Brief note on: (Each of 04 marks) **(08)**
(a) Discuss SN1 reaction with their mechanism.
(b) Give one example of Elimination reaction of Alcohols.

Q.3. B) Answer the following questions (Any two)
(a) Do as directed (Each of 02 marks) **(04)**
1. Explain the rate equation for SN1 reactions.
2. Explain the geometry of double bonded carbon.
(b) Discuss the stability of sp^3, sp^2 and sp hybridized carbanions. **(04)**
(c) Explain hydrohalogenation mechanism of alkynes with example. **(04)**

Q.4. A) Answer the following questions.
(a) Short note (Each of 02 marks) **(04)**
1. Why iodide is a better leaving group than chloride?
2. Why protic solvents are used in SN1 mechanism?
(b) Give chemical reaction for Benzidine rearrangements and Curtius reaction. **(04)**

Q.4. B) Answer the following questions (Any two)
(a) Do as directed. (Each of 01 marks) **(03)**
1. Racemic product is formed in which mechanism?
2. Name the product of Aldol condensation of two molecules of Acetaldehyde.
3. All molecule/ions can act as Nucleophile if they have…….
(b) Discuss Pinacol- pinacolone rearrangement. **(03)**
(c) Explain how electron donating and withdrawing groups affect the stability of carbocations? **(03)**