

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc., Summer 2017-18 Examination

Semester: 1
Subject Code: 11205101
Subject Name: Organic Chemistry I

Date: 21/05/2018
Time: 10:30 am to 1:00 pm
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) Essay type/ Brief note (Each of 04 marks) (08)**
 (a) Describe Markonikov's rule along with reaction involved.
 (b) Describe Anti-Markonikov's rule along with reaction involved.
- Q.1. B) Answer the following questions (Any two) (04)**
 (a) Short note/ Brief note (2x2)/ (Each of 02 marks) (04)
 1. Define : Electrophile & Nucleophile.
 2. Define : Energy of activation & transition state.
 (b) Describe Elimination reaction with examples. (04)
 (c) Describe Substitution reaction in Ethane & Propene. (04)
- Q.2. A) Answer the following questions. (04)**
 (a) Short note/ Brief note (2x2)/ Fill in the blanks. (Each of 02 marks) (04)
 1. Explain free radical alongwith their stability order.
 2. Pinacol-Pinacolone rearrangement with mechanism.
 (b) Describe Bayer-Villiger reaction with mechanism. (04)
- Q.2. B) Answer the following questions (Any two) (03)**
 (a) Short note/ Multiple choice questions. (Each of 01 marks) (03)
 1. One step mechanism in elimination reaction is.
 2. All molecule/ions can act as Nucleophile if they have.
 3. Br^+ and Cl^+ are examples of
 (b) Wagner- Meerwein reaction with mechanism (03)
 (c) Give complete reaction step to prepare Ethene and Ethane. (03)
- Q.3. A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**
 (a) Explain in detail Tiffeneau-Demyanov and Favorskii reaction.
 (b) Explain Elimination reaction of Halides and Alcohols
- Q.3. B) Answer the following questions (Any two) (04)**
 (a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks) (04)
 1. What is Nitrene? Give its structure.
 2. What is Aryne? Give its structure.
 (b) Explain the Generation, reactivity and stability order of carbocation and carbanion. (04)
 (c) Give Dakin and Wittig rearrangements (04)
- Q.4. A) Answer the following questions. (04)**
 (a) Short note/ Brief note (2x2)/ Fill in the blanks. (Each of 02 marks) (04)
 1. Write note on Taft equation.
 2. Explain the use of isotope to determine reaction mechanism
 (b) What are Hetrynes? Give one example of it. (04)
- Q.4. B) Answer the following questions (Any two) (03)**
 (a) Short note/ Multiple choice questions. (Each of 01 marks) (03)
 1. In which reaction Alkanoate is formed as Intermediate
 2. Name the product obtained by condensation of two molecules of Acetaldehyde in NaOH
 3. 1-Aminomethyl cycloalkanol on treatment with nitrous acid forms
 (b) Explain in detail Tiffeneau-Demyanov and Favorskii reaction. (03)
 (c) Give chemical reaction for Benzidine rearrangements and Curtius reaction (03)