

**PARUL UNIVERSITY**  
**FACULTY OF APPLIED SCIENCE**  
**M.Sc. Winter 2019-20 Examination**

**Semester: I**  
**Subject Code: 11205101**  
**Subject Name: Organic Chemistry-I**

**Date: 29/11/2019**  
**Time: 10:30am to 01:00pm**  
**Total Marks: 60**

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**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 a short note. (Each of 04 marks) (08)**  
(a). Describe Hammett equation.  
(b). Write a note on effects of substituents in the organic reactions.
- Q.1. B) Answer the following questions (Any two) (04)**  
(a) Write short answers. (Each of 02 marks) (04)  
1. Give the uses of Isotopes in the organic reactions.  
2. Define energy of activation and transition state.  
(b) Describe Taft equation. (04)  
(c). Describe Linear free Energy Relationship (LFER) in organic reaction. (04)
- Q.2. A) Answer the following questions. (04)**  
(a) Write short answers. (Each of 02 marks) (04)  
1. Give types of organic reactions.  
2. State and explain Zaitsev's rule.  
(b) Explain SN<sup>2</sup> reaction with mechanism with all factors affecting it. (04)
- Q.2. B) Answer the following questions (Any two) (03)**  
(a). Explain E1-reaction mechanism. (03)  
(b). Give three reaction in involving dehydration of alcohols. (03)  
(c). Explain Hoffman elimination reaction with examples. (03)
- Q.3. A) Write a short note. (Each of 04 marks) (08)**  
(a). Explain Pinacol-Pinacolone re-arrangements with mechanism.  
(b). Explain Wolff re-arrangements with mechanism.
- Q.3. B) Answer the following questions (Any two) (04)**  
(a) Write short answers. (Each of 02 marks) (04)  
1. Give only Benzidine re-arrangement reaction.  
2. Give only reaction for Curtius reaction.  
(b). Describe Favorskii reaction mechanism. (04)  
(c). describe Bayer-Villiger reaction mechanism. (04)
- Q.4. A) Answer the following questions. (04)**  
(a) Write short answers. (Each of 02 marks) (04)  
1. What are reactive intermediates? Give their types.  
2. What are Arynes?  
(b). Describe structure, generation, reactions and stability of Carbocations. (04)
- Q.4. B) Answer the following questions (Any two) (03)**  
(a). Describe structure, generation and stability of freeradicals. (03)  
(b). What are Carbenes? Explain its types. (03)  
(c). What are Carbanions? Explain its structure and generation. (03)