

**D-6322**

**M.Sc. (II<sup>nd</sup> Semester) Examination, 2020**

**CHEMISTRY**

**(Organic Chemistry – II)**

**Time Allowed : Three Hours**

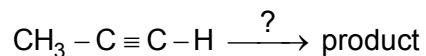
**Maximum Marks : 70**

**SECTION - A**

**Note :** Attempt any ten questions. Each question carries one mark. **1×10=10**

**Q. 1.** Objective type :

- (i) Which of the following reagents give same product :



- (a)  $\text{LiAlH}_4, \text{H}_3\text{O}^+$   
(b)  $\text{DIBAL} - \text{H}, \text{H}_3\text{O}^+$   
(c)  $\text{Na/Liq. NH}_3, \text{ROH}$   
(d)  $\text{H}_2 - \text{Lindlar catalyst}$

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- (ii) Which was the first molecular identified as such by early chemists :
- (a) Wolff's rearrangement  
(b) Pinacol – Pinacolone rearrangement  
(c) Favorskii rearrangement  
(d) Hofmann rearrangement
- (iii) Which intermediate is formed in Wolff's reaction :
- (a) Carbene  
(b) Ketene  
(c) Carbocation  
(d) Carbanion
- (iv) Select the correct statement regarding the aromatic nitrogen molecule :
- (a) It is not hybridized  
(b) It is sp hybridized  
(c) It is sp<sup>2</sup> hybridized  
(d) It is sp<sup>3</sup> hybridized

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- (v) Simon-Smith reaction is related with :
- (a) Carbene
  - (b) N-heterocyclic carbene
  - (c) Nitrene
  - (d) Xanthene
- (vi) Gilman's reagent act as :
- (a) Soft nucleophile
  - (b) Hard Nucleophile
  - (c) Soft electrophile
  - (d) Hard electrophile
- (vii) Can a linear molecule have aromaticity :
- (a) Yes
  - (b) No
- (viii) \_\_\_\_\_ medium is used in Benzylic acid rearrangement reaction.

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- (ix) Aromatic molecules contain \_\_\_\_\_  $\pi$ -electrons.
- (x) Stability of free radicals can be explained on the basis of \_\_\_\_\_.
- (xi) Wilkinson catalyst is \_\_\_\_\_.
- (xii) Jones reagent is \_\_\_\_\_.

**SECTION - B**

**Note :** Attempt any five questions. Each question carries two marks. **5×2=10**

**Q. 2.** Very short answer type (25-30 words) :

- (i) What is anti aromaticity ? Give one example.
- (ii) Write the reaction of oxo process.
- (iii) What is Grignard reagent ? Explain with example.
- (iv) Write the reaction of hydroxylation of alkenes.

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- (v) What do you mean by photoreduction ?
- (vi) Write the structure and example of Azulene.
- (vii) Write the full name of LDC, LTA, PDC.

**SECTION - C**

**Note :** Attempt any five questions. Each question carries 4 marks. **5×4=20**

**Q. 3.** Short answer type (250 words) :

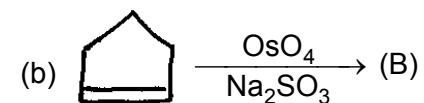
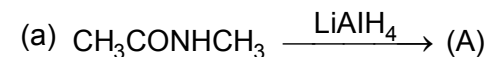
- (i) Write and explain Wagner – Meerwein rearrangement.
- (ii) Describe the theory of aromaticity.
- (iii) Discuss a method of preparation and chemical reaction of Grignard reagent.
- (iv) Write the short notes on :  
Robinson annelation reaction.

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**P.T.O.**

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(v) Complete the following reaction :



- (vi) Write a brief note on Pinacol – Pinacolone rearrangement.
- (vii) What is epoxidation? Give its suitable example.

**SECTION - D**

**Note :** Attempt any three questions. Each question carries 10 marks. **3×10=30**

**Q. 4.** Essay type (more than 500 words) :

- (i) Write and explain with example following reagent :
- (a)  $\text{LiAlH}_4$
- (b)  $\text{KMnO}_4$  &  $\text{OsO}_4$
- (c) DDQ & PCC

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(ii) Write short notes on :

(a) Benzil – Benzilic rearrangement

(b) Simon – Smith reaction.

(iii) (a) Discuss the non-benzenoid compound.

(b) Explain the phase transfer catalyst and

Ziegler Natta Catalyst.

(iv) Write short notes on :

(a) Heck reaction

(b) Reformatsky reaction

(c) Jones and Swern oxidation

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