

**M.Sc. (II<sup>nd</sup> Semester) Examination, 2021**

**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) The Wolff-Kirshner reduction reduces  
carbonyl compounds to \_\_\_\_\_.

- (a) Alcohols
- (b) Hydrocarbons
- (c) Ketones
- (d) Acids

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(ii) Intermediate formed in Hofmann  
rearrangement is :

- (a) Isocyanate
- (b) Ketene
- (c) Alkenes
- (d) Carbanion

(iii) Which intermediate is formed in Wolff's  
reaction:

- (a) Carbene
- (b) Ketene
- (c) Carbocation
- (d) Carbanion

(iv) Which medium is used in benzylic acid  
rearrangement reaction?

- (a) Neutral
- (b) Mild Acidic
- (c) Strong Basic
- (d) Strong Acidic

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- (v) Simon-Smith reaction is related with :
- (a) Carbene
  - (b) N-heterocyclic carbene
  - (c) Nitrene
  - (d) Xanthene
- (vi) Role of Liquid ammonia used in reduction reactions is to:
- (a) Promotes oxidation
  - (b) Provides electron rich environment
  - (c) Protects from light
  - (d) None of the above
- (vii) A linear molecule can have aromaticity.  
(State true or false)
- (viii) Bio oxidation is carried out by enzymes.  
(State True or False)

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- (ix) Complete the following reaction:  
$$\text{RX} + \text{Mg} + \text{Dry ether} \rightarrow \text{_____} ?$$
- (x) A solution prepared by dissolving chromium trioxide in aqueous sulfuric acid gives \_\_\_\_\_
- (xi) The IUPAC name for Wilkinson's 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 Huckel's rule.
- (iii) What organo palladium compounds?
- (iv) What is bio-reduction.

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- (v) What do you mean by photoreduction ?
- (vi) Write the names of any four organo copper compounds.
- (vii) Write the full name of mCPBA, NBS, LTA

**SECTION - C**

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

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

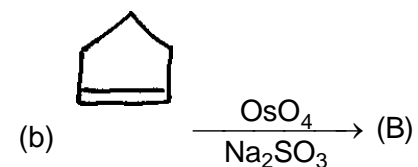
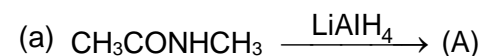
- (i) Write and explain Wagner – Meerwein rearrangement.
- (ii) Describe the theory of aromaticity.
- (iii) Discuss a method of preparation and chemical reaction of Grignard reagent.

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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

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reagent :

(a)  $\text{LiAlH}_4$

(b)  $\text{KMnO}_4$  &  $\text{OsO}_4$

(ii) Write short notes on :

(a) Bio-oxidation

(b) Wilkinson catalysis.

(iii) Write short notes on :

(a) Phase transfer catalyst

(b) Ziegler Natta Catalyst.

(iv) Write short notes on :

(a) Heck reaction

(b) Gilman's Reagent

