Total Pages : 8

H-6322

M.Sc. (Semester-II) Examination, July 2022

CHEMISTRY

(Organic Chemistry - II)

Time Allowed : Three Hours

Maximum Marks : 70

Minimum Passing Marks : 25

Note : This question paper is divided into four sections. All sections are **compulsory**. Attempt questions as per given instructions in each section.

SECTION-A

(Objective Type Questions)

Note : Attempt **any ten** questions. Each question carries **1** mark. [1x10=10]

1.(A) Choose the correct option :

(i) PCC is used to oxidize alcohol to :

(a) Acid (b) Aldehyde

(c) Ester (d) Amide

(ii) The reduction with $NaBH_3CN$ results in the formation of :

(a) Amine compound

(b) Alcohol compound

(c) Imine compound

(d) Alkane compound

(iii) Carbene intermediate is involved in which of the following reaction?

(a) Simmons - Smith reaction

(b) Reimer-Tiemann reaction

(c) Both (a) and (b)

(d) None of the above

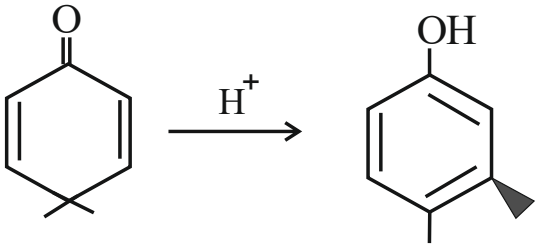
(iv) The reagent used in Birch reduction is :

(a) Na / Liq. NH_3

(b) N_2H_2

(c) $NaBH_4$

(d) None of the above

(v) 

The above reaction is known as :

(a) Wolff rearrangement

(b) Pinacol - Pinacolone rearrangement

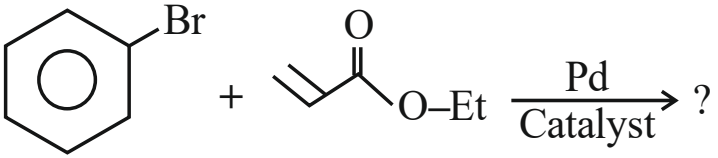
(c) Dienone - Phenol rearrangement

(d) Beckmann rearrangement

(vi) Grignard Reagent is air sensitive compound. (State True or False)

(vii) Neighbouring group participation results in the speed-up of reaction. (State True or False)

(viii) Complete the following reaction :



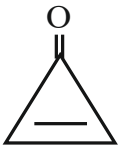
(ix) Acetal dehyde can be alkylated at carbonyl carbon with the help of :

(a) Umpolung reaction

(b) mCPBA

(c) $KMnO_4$

(d) OsO_4

(x) 

The above compound is :

(a) Aromatic compound

(b) Antiaromatic compound

(c) Non-aromatic compound

(d) None of the above

(xi) Internal alkyne on ozonolysis gives :

(a) Ketone (b) Acid

(c) Ester (d) None of the above

(xii) Wittig-Horner reaction results in the formation of :

(a) Alkene (b) Alkyne

(c) Alkane (d) None of the above

SECTION-B

(Very Short Answer Type Questions)

Note : Attempt **any five** questions. Each question carries **02** marks. (Maximum word limit is **25-30** words).

[2x5=10]

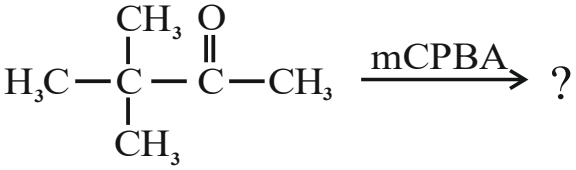
2. (i) Write Hydroboration reaction.

(ii) What is DDQ?

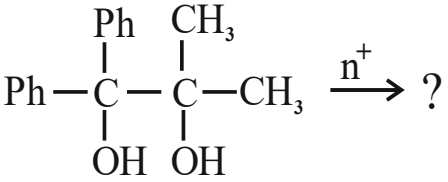
(iii) Write use of Diborane.

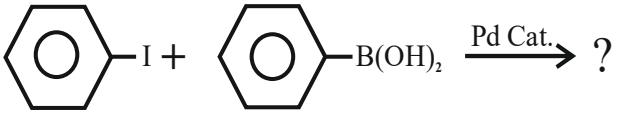
(iv) Write Wolff rearrangement reaction

(v) Complete the following :



(vi) Complete the following :



(vii) 

complete above reaction.

SECTION-C

(Short Answer Type Questions)

Note : Attempt **any five** questions. Each question carries **04** marks. (Maximum word limit is **250** words). [5x4=20]

3. (i) Write the mechanism of Benzil-Benzilic rearrangement.

(ii) Discuss PMO approach for aromaticity.

(iii) Write note on Wilkinson catalyst

(iv) Discuss 1, 3-Dipolar addition reaction.

(v) Write note on Ziegler-Natta catalyst.

(vi) Write notes on organozinc and organocadmium compound.

(vii) Discuss Favorskii reaction.

SECTION-D

(Essay Type Questions)

Note : Attempt **any three** questions. Each question carries **10** marks. (Maximum word limit is more than **500** words). [3x10=30]

4. (i) Write notes on following reagents :

(a) Enzymatic reduction

(b) LTA

(c) NBS

(d) Me Li

(ii) Describe the following :

(a) Mannich reaction

(b) Stobble reaction

(c) Reduction of nitrile

(d) Stevens rearrangement

(iii) Write notes on the following :

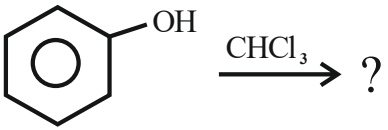
(a) Swern oxidation

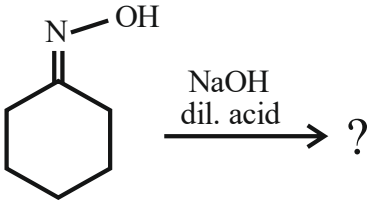
(b) Robinson annulation

(c) HMO theory for aromatization

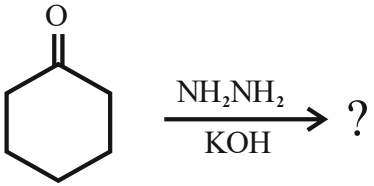
(d) Gilman's reagent

(iv) Complete the following reactions :

(a) 

(b) 

(c) $CH_3 - C \equiv C - CH_3 \xrightarrow{Na / Liq.\ NH_3} ?$

(d) 

----x----