Enrollment No: _____ Exam Seat No: _____

C. U. SHAH UNIVERSITY

Winter Examination-2022

Subject Name: Organic Chemistry-I

Subject Code: 5SC01OCH1 **Branch: M.Sc. (Chemistry)**

Semester: 1 **Date: 03/01/2023** **Time: 11:00 To 02:00** **Marks: 70**

Instructions:

(1) Use of Programmable calculator and any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

SECTION – I

Q-1 **Attempt the Following questions** **(07)**

a. Define: Homolytic bond cleavage **01**
b. What do you mean by Nucleophile? **01**
c. Explain Heterolytic bond cleavage. **01**
d. Give any four examples of electrophile. **01**
e. Write down Name and Structure of DMF. **01**
f. Write only reaction of Mukaiyama reaction. **01**
g. Give Structure of DBA and DPPF ligands used in Coupling reactions. **01**

Q-2 **Attempt all questions** **(14)**

a. Explain Nazarov cyclization reaction with mechanism. **07**
b. Write down Wolff-Kishner reaction with mechanism and its applications. **07**

OR

Q-2 **Attempt all questions** **(14)**

a. Discuss Horner-Wadsworth-Emmons reaction with mechanism and its applications. **05**
b. Write a note on Prins including mechanism and its application. **05**
c. Write down Vilsmeier-Haack reaction with mechanism. **04**

Q-3 **Attempt all questions** **(14)**

a. Discuss Hay coupling reaction with mechanism. **05**
b. Write a note on Hiyama coupling reaction. **05**
c. Write down Sonogashira coupling reaction with mechanism. **04**

OR

Q-3 **Attempt all questions** **(14)**

a. Write down Suzuki coupling reaction with mechanism and its application. **07**
b. Discuss Stille coupling reaction with mechanism and its application. **07**

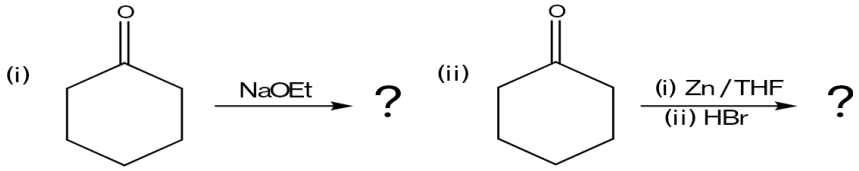
SECTION – II

Q-4 **Attempt the Following questions** **(07)**

a. Define: Rearrangement reaction **01**

b. What is migratory aptitude? Write its order **01**

c. Complete the following reactions. **01**



d. Write only reaction of Barton reaction. **01**

e. Write down Neber rearrangement. (Reaction ony) **01**

f. Define: Metathesis **01**

g. Give the structures of dibenzo [18] crown 6 and [15] crown [5]. **01**

Q-5 **Attempt all questions** **(14)**

a. Write down Barbier-Wieland reaction with mechanism and its application. **07**

b. Write a brief note on Birch reduction. **07**

OR

Q-5 **Attempt all questions** **(14)**

a. Write down Mitsunobu reaction with mechanism. **05**

b. Give reaction and mechanism of Hantzsch pyridine synthesis. **05**

c. Discuss Elbs-persulphate reaction and its mechanism **04**

Q-6 **Attempt all questions** **(14)**

a. Explain Baeyer-Villiger rearrangement. **05**

b. Discuss Demjanov rearrangement. **05**

c. Write down Appel reaction with mechanism. **04**

OR

Q-6 **Attempt all Questions** **(14)**

a. Write a note on Dess Martin Periodinane (DMP) reagent. **05**

b. Discuss about Di cyclohexyl carbodiimide (DCC) reagent. **05**

c. Explain Clemmensen reduction of 1,3-diketone compounds. **04**