

Enrollment No: \_\_\_\_\_

Exam Seat No: \_\_\_\_\_

# C. U. SHAH UNIVERSITY

## Winter Examination-2021

**Subject Name: Organic Chemistry-III****Subject Code: 4SC05OCH1****Branch: B.Sc. (Chemistry)****Semester: 5****Date: 17/12/2021****Time: 11:00 To 02:00****Marks: 70****Instructions:**

- (1) Use of Programmable calculator & 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.

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- Q-1                      Attempt the following questions:                      (14)**
- a) What do you mean by Epimer?                      (1)
- b) What is hybridization of positively charged carbon in carbocation?                      (1)
- c) Write the one generation of carbocation                      (1)
- d) Write only reaction of Ullmann reaction                      (1)
- e) What do you mean by reaction mechanism?                      (1)
- f) How many types of carbenes?                      (1)
- g) Define: Carbohydrate                      (1)
- h) Draw the structure of D and L glucose                      (1)
- i) What do you mean by active methylene compound? Give one examples.                      (1)
- j) Define: Mutarotation                      (1)
- k) Draw the structure of Aldo triose and Keto tetrose (Each one)                      (1)
- l) Arrange the order of migration of the following species in the pinacol-pinacolone rearrangement  
-H, -Ph, -R                      (1)
- m) Which reagent used in the Meerwein-Ponndorf Verley reaction.                      (1)
- n) Write the name of the step down and step-up reaction of carbohydrate.                      (1)

**Attempt any four questions from Q-2 to Q-8**

- Q-2                      Attempt all questions                      (14)**
- a) Write generation of carbanion and explain its stability.                      (7)
- b) Write the structure of carbenes and stereoselectivity and stereospecificity of carbenes                      (7)
- Q-3                      Attempt all questions                      (14)**
- a) Discuss Hantzsch Pyridine synthesis with mechanism                      (7)



- b) Explain Stevens rearrangement with mechanism (7)
- Q-4 Attempt all questions (14)**
- a) Explain Kiliani and Ruff synthesis of carbohydrate (7)
- b) Write a note on general reaction of monosaccharide (7)
- Q-5 Attempt all questions (14)**
- a) Write the synthesis of EAA and diethylmalonate (7)
- b) What do you mean by ketonic and acid hydrolysis? Write synthesis of Crotonic acid Valeric acid (7)
- Q-6 Attempt all questions (14)**
- a) Write the synthetic application of  $\beta$ -dicarbonyl compound (5)
- b) Write the generations of Benzynes (5)
- c) Write a brief note Ylides (4)
- Q-7 Attempt all questions (14)**
- a) Discuss nomenclature and classification of carbohydrates. (7)
- b) Discuss Skraup synthesis with mechanism and three applications (7)
- Q-8 Attempt all questions (14)**
- a) Explain Sorden method and Wolform method of carbohydrate (7)
- b) Discuss epimerization reaction of glucose (4)
- c) Write three generation of free radicals (3)

