

Enrollment No: _____ Exam Seat No: _____

C.U.SHAH UNIVERSITY

Summer Examination-2019

Subject Name: Organic Chemistry-III

Subject Code: 4SC05OCH1

Semester: 5

Date: 16/03/2018

Branch: B.Sc. (Chemistry)

Time: 10:30 To 01:30

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 are carbocations? (1)
 - b) Give an example of heterolytic cleavage of bond and homolytic cleavage of bond. (1)
 - c) What are nucleophiles? Give one example of it. (1)
 - d) Draw the structure of Pinacol. (1)
 - e) Draw the structure of reagent which is used in M. P. V. reduction. (1)
 - f) Define: Rearrangements (1)
 - g) What are carbohydrates? (1)
 - h) How many chiral carbon in glucose? (1)
 - i) How carbohydrates are for in plant with presence of light? (write only reaction) (1)
 - j) What are Epimers? (1)
 - k) What is hydrolysis? (1)
 - l) Give only reaction of Skruap synthesis. (1)
 - m) Draw the structure of β -dicarbonyl compound. (1)
 - n) Give the names of types of Ylides. (1)

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

- Q-2 Attempt all questions (14)**
- a) What are carbenes? How they are generated? Introduce their structure. (7)
 - b) Give the generation of carbocations and nitrenes. (7)
- Q-3 Attempt all questions (14)**
- a) Discuss Knorr-pyrrole reaction with mechanism and its applications. (7)
 - b) Discuss Ullmann reaction with mechanism and its applications. (7)
- Q-4 Attempt all questions (14)**
- a) What are Ylides? Discuss their structure. How they are generated? (7)



b) Explain initiation, propagation and termination reaction with proper example. (7)

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

a) Discuss Sowerby method for conversion of aldose to ketose having two more carbon atoms. (6)

b) Explain Wolfmeyer method for synthesis of next higher ketose from aldose. (5)

c) Give Osazone formation reaction of fructose. (3)

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

a) What is ketonic hydrolysis? Explain acidic hydrolysis with examples? (5)

b) Give the synthesis of crotonic acid from EAA with reaction explanation. (5)

c) Write the synthesis of valeric acid from diethyl malonate. (4)

Q-7 **Attempt all questions** (14)

a) Discuss Stability of carbocation with proper examples (7)

b) Discuss Hantzsch-pyridine synthesis with its mechanism and applications. (7)

Q-8 **Attempt all questions** (14)

a) Explain in detail Kiliani reaction with proper examples. (7)

b) Discuss Ruff method (Step down) with proper example. (4)

c) Write a note on mutarotation. (3)

