

C.U.SHAH UNIVERSITY

Summer Examination-2020

Subject Name: Organic Chemistry-I

Subject Code: 4SC03OCH1

Branch: B.Sc. (Chemistry)

Semester: 3

Date: 27/02/2020

Time: 02:30 To 05:30

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.

Q-1	Attempt the following questions:	(14)
a)	Write any two examples of free radicals.	01
b)	True or False : The overall stability of carbocation can be written as $(\text{CH}_3)_3\text{C}^+ > (\text{CH}_3)_2\text{CH}^+ > \text{CH}_3\text{CH}_2^+ > \text{CH}_3^+$	01
c)	Write any two examples of an electrophilic substitution reaction.	01
d)	Give the example of non-aromatic compound.	01
e)	Draw the chemical structure of thiophene.	01
f)	How many carbon and nitrogen elements are present in Pyrrole?	01
g)	Complete the following reaction $\text{CH}_3\text{CHO} + \text{CH}_3\text{CHO} \longrightarrow$	02
h)	Complete the following reaction $\text{R-CH}_2\text{-COOH} + \text{Cl}_2 \longrightarrow$	02
i)	Discuss about chlorination of Pyrrole with reaction scheme.	02
j)	Write some physical properties of thiophene.	02

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

Q-2	Attempt all questions	(14)
a)	Explain an Inductive effect with appropriate examples.	07
b)	Discuss about stability of carbanions with suitable examples.	07
Q-3	Attempt all questions	(14)
a)	What is an electrophilic substitution reaction? Discuss about Nitration with an example.	07
b)	Write a note on Friedel-crafts alkylation.	07
Q-4	Attempt all questions	(14)
a)	Write a note on Sulphonation reaction.	07
b)	Discuss about physical properties of Pyrrole and furan.	07



- Q-5** **Attempt all questions** **(14)**
- a) Describe any two synthesis methods for Pyrrole. 07
 - b) Write a note on chemical reactions of thiophene. 07
- Q-6** **Attempt all questions** **(14)**
- a) Discuss about any two ring closure methods for synthesis of furan derivatives. 07
 - b) Explain: How to prepare carboxylic acids. 07
- Q-7** **Attempt all questions** **(14)**
- a) Write preparation methods of Aldehydes and ketones 07
 - b) Discuss about IUPAC nomenclature of Aldehydes and ketones. 07
- Q-8** **Attempt all questions** **(14)**
- a) Write chemical reactions of Aldehydes and ketones with HCN and R-OH. 07
 - b) Explain Cannizzaro reaction with its mechanism. 07

