

Roll No.

Total No. of Pages : 03

Total No. of Questions : 09

B.Sc. (Non-Medical) (Sem.-6)

ORGANIC CHEMISTRY-IV

Subject Code :BSNM-601-18

M.Code : 79493

Date of Examination : 02-01-2023

Time : 3 Hrs.

Max. Marks : 50

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **ONE** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

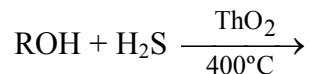
SECTION-A

1. Multiple Choice Questions/Write briefly :

- a) The functional group region in IR spectroscopy-
- a) $4000\text{-}1300\text{ cm}^{-1}$ c) $1300\text{-}900\text{ cm}^{-1}$
b) $900\text{-}650\text{ cm}^{-1}$ d) $2000\text{-}1600\text{ cm}^{-1}$
- b) Which of the following is natural polymer?
- a) Celluloid c) Rayon
b) Cellulose d) Terylene
- c) Which of the following spectroscopy absorbs UV light?
- a) MS c) IR
b) NMR d) UV
- d) Mustard gas is prepared by action of ethene on :
- a) Thionyl chloride c) Sulphuryl chloride
b) Sulphur monochloride d) Sulphur dioxide

e) What are Homopolymers?

f) Complete the reaction-



g) What are the two components of starch?

h) What are essential and non-essential amino acids?

i) What are nucleotides?

j) What is the source of radiation of UV light?

SECTION-B

2. What are mercaptan and explain **any one** method of its preparation. How does ethyl mercaptan react with :

(a) Aldehydes

(b) Ketones

(c) Acid chloride.

3. What is condensation or step growth polymerisation? Explain the following condensation polymerisation reaction:

(a) Nylon-66

(b) Nylon-6

4. Explain shielding and de-shielding effect in NMR spectroscopy with example. How many numbers of peaks are in the following :

(a) Toluene

(b) Acetophenone

(c) Ethanol.

5. Explain the effect of conjugation in case of UV spectroscopy. A chemist has a sample of Phenylalanine with an absorbance of 0.81 at a wavelength of 257 nm. The molar absorption coefficient is $8850 \text{ M}^{-1}\text{cm}^{-1}$. The path length of light is 3 cm. What is the concentration of sample?
6. Explain disaccharide and polysaccharides with examples. Also, explain Wohl Degradation reaction.

SECTION-C

7. Explain principle and applications of IR spectroscopy.
8. Write the synthesis of Di-ethyl malonate and discuss its all physical and chemical properties.
9. What are amino acids and iso-electronic points of amino acids? Explain the formation and synthesis of phenylalanine using Erlemeyer Azlactone.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.