INTERNATIONAL CENTRE FOR APPLIED SCIENCES
MAHE, MANIPAL
B.Sc. (Applied Sciences) in Engg.
End – Semester Theory Examinations – Nov./ Dec. 2020
III SEMESTER - ORGANIC CHEMISTRY-I (ICH 231)
(Branch: Chemical)

Time: 3 Hours **Date: 27 November 2020** **Max. Marks: 50**

- ✓ **Answer ALL the questions.**
- ✓ **Missing data, if any, may be suitably assumed**

1A. **a)** How is acetaldehyde prepared from the following?
i) Ethyl alcohol **ii)** Acetylene **iii)** 1,1-Dichloroethane
b) How is acetone obtained from the following?
i) 2-propanol **ii)** Propyne

1B. Explain the method of formation of peptide synthesis of Glycyl-Alanine.

1C. Give reason for the following:
i) Toluene is more reactive than benzene towards electrophilic substitution reactions.
ii) Ammonia is more basic than pyridine **(5+3+2=10 marks)**

2A. Discuss the structure of protein in detail with appropriate diagram.
2B. Mention the two components of starch. Write their structure and isolation of starch.
2C. Explain the following reactions of amines
i) Carbylamine reaction **ii)** Reaction with nitrous acid **(5+3+2= 10 marks)**

3A. Give an account on the following:
i) Mordant and vat dyes
ii) Ingrain and Disperse dyes
3B. What are amines? Write the classification of amines with examples. Give reason: Amines are more basic than ammonia
3C. Discuss the resonance structure of benzene. How does it explains the observed bond length in benzene? **(5+3+2= 20 marks)**

4A. Give the classification of carbohydrates and explain the following conversion methods:
i) Aldohexose to aldopentose
ii) Ketose to Aldose
4B. Explain with the suitable example the effect of following substituent's on electrophilic substitution of benzene.
i) Electron donating group
ii) Electron withdrawing group
iii) Halogens
4C. Write a note the terminal residue analysis of peptides. **(5+3+2= 20 marks)**

5A. With the flowchart describe the manufacturing process of sucrose from sugarcane.
5B. Discuss the Otto-Witt's chromophore- auxochrome theory of dyes with suitable example.
5C. Justify the following:
i) Furan is a heterocyclic compound but cyclohexane is not
ii) Maltose is a reducing sugar but not sucrose **(5+3+2= 20 marks)**