Question Paper

Exam Date & Time: 07-May-2019 (09:30 AM - 12:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

INTERNATIONAL CENTRE FOR APPLIED SCIENCES
III SEMESTER B.Sc, (Applied Sciences) - End Semester Theory Examination - April / May 2019

ORGANIC CHEMISTRY-I [ICH 231]

Marks: 100 **Duration: 180 mins.**

Answer 5 out of 8 questions.

1) A) Explain the following: (8)
i)Structure of Acetylene
ii) Corey-House alkane synthesis
iii) Saytzeff rule
iv) Markovnikov rule

B) i) How is acetone obtained from the following? (8)
a) 2-propanol b) 2,2-Dichloropropane
ii) Give an account of Isomerism in alkenes

C) Explain any two distinguishing tests between acetaldehyde and acetone (4)

2) A) i) Explain the preparation of primary amines by the following methods: (8)
a)Hofmann's degradation of amides b) Gabriel Phthalimide method.
ii) What happens when
a) Nitrous acid reacts with dimethyl amine?
b) Ethylamine undergoes carbylamines test?

B) Give an account of the following with suitable examples. (8)
a) Sugars and non-sugars
b) Acetals and hemiacetals
c) D-sugars and L-sugars
d)Mutarotation.

C) Explain the following: (4)
a) Killiani-Fisher synthesis
b) Ruff Degradation

3) A) Give an account of the following: (8)
a) Fisher and Haworth representation of α-D-Glucose and β-D-glucose
b) Manufacture of sucrose

B) i) Discuss the preparation and uses of the following: (8)
a) Cellulose xanthate b) Cellulose acetate
ii) Write the structures of starch and cellulose.

	C)	Give reasons: i) Mordant dye cannot be applied directly on fabrics. ii) Benzene is colorless while azo-benzene is red	(4)
4)	A)	i) Explain the following: a)Lucas test for distinguishing primary, secondary and b) Preparation of 1^0 2^0 and 3^0 alcohols from organolithium compounds ii) Give the following reactions of alkyl halides a) Williamson synthesis b) Wurtz reaction	(8)
	B)	Give an account of the following: a) Acid dyes b) Vat dyes c) Disperse dyes d) Mordant dyes	(8)
	C)	Differentiate between the following: i) Bathochromic shift and hyposochromic shift ii) Chromophores and Auxochromes	(4)
5)	A)	i) Give the methods of preparation of alkynes from the following a) Vicinal dihalides b) Tetra halides ii) Explain the following reactions a) Polymerisation of Alkynes b) Oxidation reactions of alkynes	(8)
	B)	i) What is Aromaticity? What are the criteria for aromaticity? ii) Classify the following compounds as aromatic or nonaromatic with proper reasoning - Benzene, Pyridine, Cycloheptatriene and Cyclooctatetraene	(8)
	C)	Give reasons: a) Boiling points of carboxylic acids are higher than those of alcohols of same molecular weight. b) Chloroacetic is stronger acid than acetic acid	(4)
6)	A)	i) What are activating and deactivating substituent groups in benzene? Give examples. ii) Give the steps of the reaction for the preparation of m-bromonitro benzene and o- and p- bromonitro benzene starting from benzene.	(8)
	B)	How are carboxylic acids prepared from the following? i) Esters ii) Alkenes iii) Grignard reagent iv) Alcohols	(8)
	C)	Give reasons: a) Boiling points of carboxylic acids are higher than those of alcohols of same molecular weight b) Formic acid is stronger acid than acetic acid	(4)
7)	A)	i)Explain the structures of Pyrrole and Furan. ii)Give one example each for the following a) Electrophilic substitution reaction of Pyridine	(8)

b) Nucleophilic substitution reaction of pyridine

B) i)Explain the mechanism of Friedal Craft's alkylation of benzene. What are the drawbacks of this reaction? (8)
ii) Explain the Determination of specific rotation using polarimeter

C) Write a note on fluorescent brightening agents (4)

8) i) Explain the following with a suitable example (8)

A)
a) Baeyer's test
b) Diels-Alder reaction

ii) How are the following conversions done?
a) Propene to 1- propanol
b) Isobutene to isooctane

B) Give an account of the following (8)
i) Simple proteins ii) Conjugated proteins iii) Fibrous proteins iv) Globular proteins

C) Discuss the factors affecting the rate of enzyme action. (4)

-----End-----