Reg.No.									

INTERNATIONAL CENTRE FOR APPLIED SCIENCES

(Manipal University)

III SEMESTER B.S. DEGREE EXAMINATIONS - OCT. /NOV. 2017

SUBJECT: ORGANIC CHEMISTRY (CH 231)

(BRANCH: BIOMEDICAL)

Saturday, 4 November 2017

Time: 3 hrs. **Max. Marks: 100**

✓ **Answer ANY FIVE full questions.**

1 A. Explain the following:
i) Formation of a Pi bond
ii) Hybridisation of the carbon atom in Ethylene molecule.
iii) Intramolecular hydrogen bonding
iv) Isomerism in Butene

B. Give an account of the following:
i) Inductive effect ii) Mesomeric effect

C. Explain the fractionation of petroleum and the important applications of different fractions of petroleum.

(8+6+6)M

2A.How are the following conversions made?
i) Isopentane to n-pentane ii) Isobutene to isooctane.
iii) Propylene to acetic acid iv) Propene to 1-propanol

B. Give three different methods of preparation of alkyl halides from alcohols.

C. Explain the mechanism of the following:
i) Anti Markovnikoff's addition reaction.
ii) Dehydration of primary and tertiary alcohol's.

(8+6+6)M

3A.Give an account of the following reactions
i) Mechanism of chlorination of methane
ii) Differences between S_N1 and S_N2 mechanisms

B. Explain the following with suitable examples:
i) Wurtz reaction
ii) Williamson's synthesis

C. How do you prepare acetic acid from the following?
i) Grignard reagent. ii) Ethyl alcohol.
iii) Methyl bromide

(8+6+6)M

4A.Give reasons for the following:
i) Aldehydes are more reactive than Ketones.
ii) Aldehydes but not ketones give positive test with Tollen's reagent.
iii) Ethyl alcohol but not methyl alcohol gives iodoform test.
iv) Denatured spirit is not absolute alcohol.

B. Explain the manufacture of ethyl alcohol from starch.

C. Give any three methods of preparation of ethylene glycol.

(8+6+6)M

5A.Explain the following:

i) Hydrolysis of alkyl cyanide ii) Hydrolysis of ester

iii) α- halogenation of carboxylic acid iv) Kolbe's reaction

B. Write the chemical reaction of Acetic acid with the following reagents.

i) Thionyl chloride ii) Ammonia and heat

iii) Ethyl alcohol and H_2SO_4.

C. How are the following conversions affected?

i) 2-Butene to 1,2-Dimethylcyclopropane ii) Propyne to Propene

iii) Acetylene to oxalic acid.

(8+6+6)M

6A.Illustrate the following:

i) Wolf-Kishner reduction ii) Carbylamine reaction

iii) Cannizzaro reaction iv) Friedel-Crafts acylation

B. Explain the following with suitable examples:

i) Oxidation of alcohols ii) Dehydrogenation of alcohols

C. Write the reaction of Ethylamine with the following reagents.

i) Methyl iodide

ii) Nitrous acid

iii) Hydrochloric acid

(8+6+6)M

7 A. Explain the structure of Benzene in terms of classical theory and M.O. theory.

B. Give three different ring opening reactions of cyclopropane.

C. Write an account of the following:

i) Conditions for Aromaticity

ii). Method of separation of mixture of amines

(8+6+6)M

8 A. Give an account of the following

i) Refining of Petroleum

ii) Cracking of Petroleum

B. Explain the preparation of methane from the following

i) Sodium acetate ii) Methyl magnesium iodide iii) Methyl iodide

C. Explain the following:

i) Saytzeff rule ii) Octane number

(8+6+6)M