

C 5132

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Name

Reg. No. ....

**FOURTH SEMESTER B.Sc. DEGREE [SUPPLEMENTARY/IMPROVEMENT]  
EXAMINATION, MAY 2016**

(UG—CCSS)

Chemistry—Core Course

CH 4B 07—ORGANIC CHEMISTRY—I

Time : Three Hours

Maximum : 30 Weightage

*Write equations wherever necessary.*

**Section A**

I. Multiple choice and fill in the blanks type questions. Answer *all* twelve questions. Each question carries a weightage of 1A :

1 The bond angle between hybrid orbitals in ethylene molecule is :

(a)  $180^\circ$ .

(b)  $120^\circ$ .

(c)  $109.5^\circ$ .

(d)  $104.5^\circ$ .

2 Acetylene can react with

(a)  $\text{NaNH}_2$ .

(b)  $\text{HBr}$ .

(c)  $\text{H}_2\text{SO}_4 + \text{HgSO}_4$ .

(d) All these.

3 Markownikoff's addition of  $\text{HBr}$  is not applicable to :

(a) 2-Butene.

(b) 1-Butene.

(c) 1-Pentene.

(d) Propene.

4 The compound which exhibits optical isomerism is

(a) 2-Hydroxy propane.

(b) 2-Chloropropane.

(c) 2-Chloropropanol.

(d) All these.

5 The hydrocarbon obtained by the decarboxylation of sodium salt of propanoic acid is

6 The most stable conformation of cyclohexane is \_\_\_\_\_

7 Hydrogenation of 2-butyne in the presence of Lindlar catalyst gives \_\_\_\_\_

**Turn over**

- 8 The structure of carbanion is
- 9 The structure of the monomer of PMMA is
- 10 Optical isomers which are not mirror images of each other are known as
- 11 An example of ortho, para directing group is
- 12 Sulphonation of aromatic compounds is an example for

(12 x 3 = 36 weightage)

**Section 13**

- II.** Short answer type questions. Answer all *nine* questions. Each question carries a weightage of 1.
- 13 What is Wurtz reaction ?
- 14 Why *trans*-2-butene is more stable than *cis*-2-butene ?
- 15 What is meant by peroxide effect ?
- 16 Draw the structure of citral.
- 17 What is meant by oxymercuration ? Give an example.
- 18 Draw the structures of geometrical isomers of 2-butene.
- 19 Draw the D and L forms of Threose.
- 20 Assign the absolute configuration (R or S) of the following molecule.

OH

H

NH<sub>2</sub>CH<sub>3</sub>

- 21 Give any two characteristics of diastereo isomers.**

(9 x 1 = 9 weightage)

**Section C**

**III.** Short Essays *or* paragraph questions. Answer any *five* questions. Each question carries a weightage of 2 :

- 22 Explain the extra stability of propene by hyper conjugation.
- 23 What is the difference between inductive effect and electromeric effect ?
- 24 Why cyclobutane is more stable than cyclopropane ? Explain.
- 25 Give a short account of the reaction of hydrogen halide with an **alkene**.
- 26 Write a brief note on the different types of organic reagents.
- 27 Write a note on the optical activity of compounds having no asymmetric carbon atom.
- 28 Discuss the halogenation of benzene with mechanism.

(5 x 2 = 10 weightage)

**Section D**

**IV.** Essay questions. Answer any *two* questions. Each question carries a **weightage** of 4 :

- 29 What do you understand by the term 'conformation' ? Discuss it with reference to conformation of butane. Which conformation of butane is more stable ? Why ?
- 30 What are **carbocations** ? Give examples. Write a short note on the stability of **carbocations**.
- 31 (i) Discuss the molecular orbital structure of benzene.

**(ii) Explain the mechanism** of Friedel Crafts **alkylation** of benzene, point out **its** limitations.

(2 x 4 = 8 weightage)