

C 5132

(Pages : 3)

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  $\frac{1}{4}$  :

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

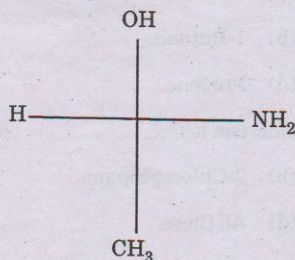
- 8 The structure of carbanion is \_\_\_\_\_.
- 9 The structure of the monomer of PMMA is \_\_\_\_\_.
- 10 Optical isomers which are not mirror images of each other are known as \_\_\_\_\_.
- 11 An example of ortho, para directing group is \_\_\_\_\_.
- 12 Sulphonation of aromatic compounds is an example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

(12 × ¼ = 3 weightage)

### Section B

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.



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

(9 × 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 × 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 × 4 = 8 weightage)