

**C 25602**

(Pages : 3)

Name.....

Reg. No.....

**FOURTH SEMESTER B.Sc. DEGREE (SUPPLEMENTARY) EXAMINATION  
APRIL 2017**

(UG—CCSS)

Chemistry

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 H-C-H bond angle in ethylene is :

- (a)  $109.5^\circ$ . (b)  $104.5^\circ$ .  
(c)  $120^\circ$ . (d)  $180^\circ$ .

2 Which of the following cycloalkane is expected to have highest ring strain ?

- (a) Cyclopropane. (b) Cyclobutane.  
(c) Cyclopentane. (d) Cyclohexane.

3 The addition of bromine to propene give 1, 2-dibromo propane. This reaction is an example for :

- (a) Nucleophilic Substitution. (b) Electrophilic Substitution.  
(c) Nucleophilic addition. (d) Electrophilic addition.

4 The hybridisation of carbon carrying positive charge in a carbocation is :

- (a)  $sp$ . (b)  $sp^2$ .  
(c)  $sp^3$ . (d) None of these.

5 Which of the following molecule is chiral ?

- (a) Propanoic acid. (b) Monobromo acetic acid.  
(c) Amino acetic acid. (d) 2-hydroxy propanoic acid.

6 Propene is more stable than expected because of ———— effect.

**Turn over**

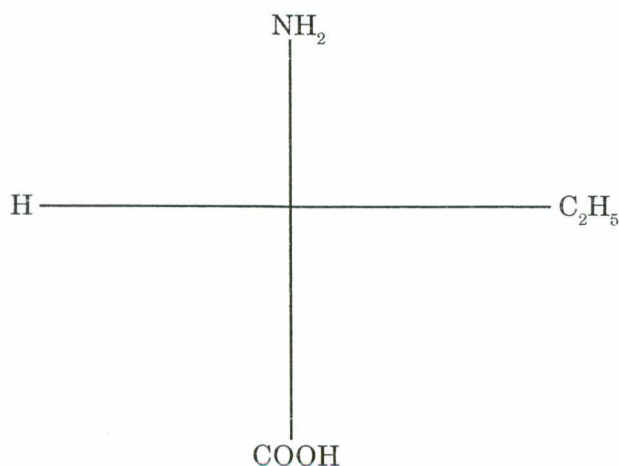
- 7 Out of 1-butyne and 2-butyne, the one which reacts with ammoniacal cuprous chloride is \_\_\_\_\_.
- 8 A cis diol can be obtained from an alkene, by the hydroxylation reaction with \_\_\_\_\_.
- 9  $\text{NO}_2^+$  is an example for \_\_\_\_\_ reagent.
- 10 Meso tartaric acid is optically inactive due to \_\_\_\_\_ compensation.
- 11  $\text{SO}_3\text{H}$  group is a \_\_\_\_\_ directing group.
- 12 Halogenation of aromatic compound is an example for \_\_\_\_\_ substitution.

(12  $\times$   $\frac{1}{4}$  = 3 weightage)

### Section B

II. Short answer type questions. Answer all *nine* questions. Each question carries a weightage of 1 :

- 13 Explain the term 'Resonance' using one example.
- 14 Among methyl amine and ammonia, which is more basic ? Why ?
- 15 Illustrate Markownikoff's rule with an example.
- 16 Draw the structure of Vitamin A.
- 17 What is hydroboration ?
- 18 Give the E and Z notation for Trans 2-butene.
- 19 Draw the configuration of enantiomers of tartaric acid.
- 20 What are diastereo isomers ?
- 21 Assign the absolute configuration (R or S) of the molecule :



(9  $\times$  1 = 9 weightage)

**Section C**

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

22 Give reason for the following :

Formic acid and chloro acetic acid are stronger than acetic acid.

23 What is hyper conjugative effect ?

24 Draw the structures of the trans and gauche conformers of n-butane using Newman projection formula. Which is more stable ?

25 Give the mechanism of addition of halogen to an alkene.

26 What is natural rubber ? Give its structure and composition.

27 What is resolution ? Suggest any *two* methods for the resolution of a racemic mixture.

28 Discuss Friedel Crafts reaction in the case of benzene.

(5 × 2 = 10 weightage)

**Section D**

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

29 Discuss the conformation of cyclohexane and their relative stability. Draw the two stable conformations of methyl cyclohexane.

30 (i) Give an account of the hybridisation, structure and stability of benzene.

(ii) Write notes on Haworth's synthesis of Naphthalene.

31 (i) Write a short note on reaction intermediates.

(ii) Give a brief account of carbenes.

(2 × 4 = 8 weightage)