C 62045 (Pages : 3) Name.....

Reg. No.....

FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, MAY 2014

(UG-CCSS)

Chemistry—Core Course

CH 4B 07—ORGANIC CHEMISTRY–I

Time : Three Hours Maximum Weightage : 30

I. Multiple choice and fill in the blanks type questions. Answer all *twelve* questions :

1 Wurtz reaction involves the use of ———.

(a) Sodium. (b) Magnesium.

(c) Palladium. (d) Tin.

2 Which among the following is an addition polymer ?

(a) PMMA. (b) PVC.

(c) PTEE. (d) All the above.

3 For a cyclic conjugated system to be aromatic, it should have ——— electrons :

(a) 6. (b) 10.

(c) 14. (d) All of the above.

4 Reaction of propyne with dilute H_2SO_4 in presence of $HgSO_4$ gives ———.

(a) Acetaldehyde. (b) Acetone.

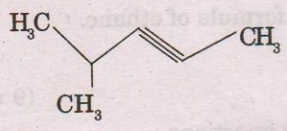
(c) Propanal. (d) None of the above.

5 A reagent for hydrogenation of alkenes is ———.

6 Wurtz reaction converts ——— to an alkane.

7 The hybridisation of a carbon in cyclohexane is ———.

8 The IUPAC name the following organic compound is ———.



9 The reagent used for the conversion of benzyl chloride to benzoic acid is ———.

10 The most stable conformation of ethane is the ——— conformation.

11 The configuration of L-erythrose can be drawn as ———.

12 Deficiency of Vitamin A can cause ———.

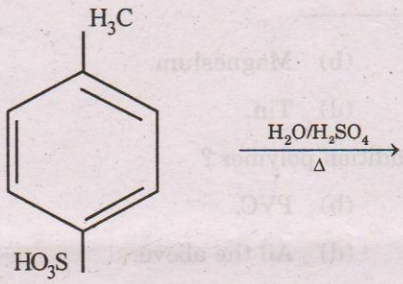
(12 × ¼ = 3 weigh

II. Short answer type questions. Answer all *nine* questions :

13 Explain Kolbe's reaction ?

14 Rearrange the following in the decreasing order of strain. Cyclobutane, Cyclohex Cyclopropane, Cyclopentane.

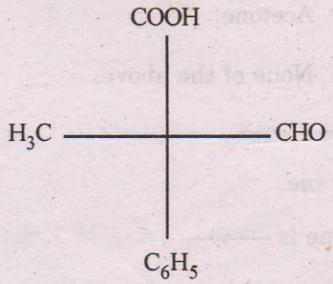
15 Complete the reaction



16 What are carbenes ?

17 Draw the structure of geraniol.

18 Assign the absolute configuration of the following molecule.



19 What is oxymercuration ?

20 Draw the most stable and least stable saw-horse formula of ethane.

21 Mention any *two* neutral nucleophiles.

(9 × 1= 9 weigh

II. Short essays *or* paragraph questions. Answer any *five* questions :

22 Explain the hybridisation and shape of acetylene.

23 Comment on the stability of the conformations of cyclohexane.

24 Outline the mechanism of peroxide effect.

25 Explain the preparation and any *two* applications of polypropylene.

26 Give a brief note on the elements of symmetry and explain their importance.

27 Explain any *two* electron displacement effects in organic molecules citing examples.

28 How do you convert ethylene to ethanol using hydroboration ?

(5 × 2 = 10 weightage)

IV. Essay questions. Answer any *two* questions :

29 Write notes on methods of resolution and asymmetric synthesis.

30 Discuss the mechanisms of nitration and Friedal Craft reactions on benzene and Outline the orientation effect of bromine and OH group.

31 Discuss the structure, hybridisation and stability of carbocations and olefins.

(2 × 4 = 8 weightage)