(Pages : 2)

C – 3780

Reg. No. : .....

Name : .....

Fourth Semester B.Sc. Degree Examination, July 2017
First Degree Programme under CBCSS
CHEMISTRY
Core Course – III
CH 1441 : Organic Chemistry – I
(2013 Admission Onwards)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions. **Each** question carries **1** mark :

1. What are free radicals ?
2. Define hyper conjugation.
3. State Markovnikoff's rule.
4. How will you convert ethylene to ethylene glycol ?
5. State Huckel's rule of Aromaticity.
6. What are Grignard reagents ?
7. What is meant by chirality ?
8. What are diastereomers ?
9. Draw the conformations of ethane. Which one is more stable ?
10. Draw the most stable conformation of cyclohexane.

(10×1=10 Marks)

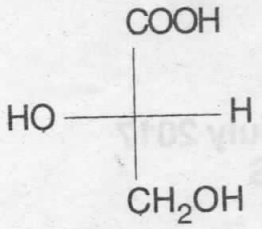
SECTION – B

Answer **any 8** questions. **Each** question carries **2** marks :

11. What are carbenes ? Give two examples.
12. What is meant by the Baeyer's test for unsaturation ? Give an example for the reaction.
13. Aniline is less basic than ammonia. Explain why ?
14. How is Benzene be converted to Toluene ?
15. How will you convert Benzene to Benzophenone ?
16. Alkyl Lithium compounds are more reactive than Grignard reagents. Why ?
17. What is the product obtained when ethyl magnesium bromide reacts with allyl bromide ? Give equation.

P.T.O.

18. Assign R or S configuration of



19. Explain the synthesis of Naproxen.
20. Maleic acid readily forms the anhydride compared to fumaric acid. Explain.
21. Give the conformers of n-Butane in Newman Projections.
22. Explain the optical activity of mesotartaric acid. **(8×2=16 Marks)**

SECTION – C

Answer **any 6** questions. **Each** question carries **4** marks :

23. Describe the determination of reaction mechanism by Kinetic studies.
24. What is hydroboration ? Explain with an example.
25. Explain what is meant by ozonolysis.
26. State and explain Huckel's rule.
27. Give the mechanism of Nitration of Naphthalene.
28. Explain the mechanism of Reformatsky reaction.
29. What are Frankland reagents ? How do they react with alkyl halides and acid halides ?
30. Explain the term Asymmetric synthesis with suitable examples.
31. Discuss the relative stability of the conformation of methyl cyclohexane. **(6×4=24 Marks)**

SECTION – D

Answer **any 2** questions. **Each** question carries **15** marks :

32. a) Discuss and illustrate the significance of the various electron displacement effects in organic molecules.
    b) Give an example each for E_1 and E_2 reactions and explain their mechanisms.
33. Explain the term directive influence of substituent groups in aromatic electrophilic substitution reactions. How are groups classified in the above basis ? Explain the behavior of any one group from each class.
34. Briefly explain the preparation and synthetic applications of acetoacetic ester and diethyl malonate.
35. Briefly discuss the optical isomerism observed among :
    i) Allenes and ii) Biphenyls **(2×15=30 Marks)**

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