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E – 3356

Reg. No. : .....

Name : .....

Fourth Semester B.Sc. Degree Examination, July 2018
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 electrometric effect.
3. The dominant product of the following reaction is
   CH_3CH_2CHBr + alcoholic KOH $\longrightarrow$.
4. Give an example for 1, 2 shift.
5. Complete the following
   $C_6H_6 + CH_3COCl + AlCl_3 \longrightarrow$.
6. What is meant by racemization ?
7. How CH_3MgI prepared ?
8. What is a polar covalent bond ? Give an example.
9. Draw the chair and boat Conformations of methyl cyclohexane.
10. What are enantiomers ?

P.T.O.

SECTION – B

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

11. What is meant by inductive effect ? Name two groups which shows – I effect.
12. Arrange ammonia, methyl ammine, dimethyl ammine and trimethyl ammine in the decreasing order of their basicity.
13. Explain ozonolysis with an example.
14. Illustrate Saytzeff's rule with an example.
15. What is the product obtained when naphthalene undergoes nitration at 60°C ?
16. What are activating groups ? Give two examples.
17. How will you convert malonic ester to crotonic acid ?
18. Alkyl lithium compounds are more reactive than Grignard reagent. Why ?
19. What are diasteriomers ?
20. Explain asymmetric synthesis.
21. What is meant by resolution of racemic mixture ?
22. Explain the geometrical isomerism in maleic acid and fumaric acid.

SECTION – C

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

23. Explain hyper conjugation with suitable example.
24. How are carbanions formed ? Discuss its hybridisation and structure.
25. What is meant by peroxide effect ? Explain with an example.
26. What is epoxidation ?
27. Give the mechanism of sulphonation of benzene.

28. Explain the mechanism of E_1 elimination.

29. State and explain Huckel's rule.

30. Explain elimination addition mechanism.

31. Write a note on chirality.

SECTION – D

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

32. What are carbenes ? Discuss their formation, hybridisation, structure and relative stability.

33. Discuss the mechanism and stereochemistry of
    i) Alkaline hydrolysis of CH_3Br
    ii) Alkaline hydrolysis of tertiary butyl bromide.

34. How will you perform the following conversions Acetoacetic ester to :
    i) crotonic acid
    ii) glutaricacid
    iii) 1,3-butane diol
    iv) acetone
    v) butanoic acid ?

35. Discuss :
    i) the resonance concept and
    ii) the molecular orbital concept of the structure and stability of benzene.
