



K16U 2091

Reg. No. :

Name :

**III Semester B.Sc. Degree (CBCSS – Reg./Supple./Imp.) Examination,
November 2016
(2014 Admn. Onwards)
CORE COURSE IN CHEMISTRY
3B04 CHE : Organic Chemistry – 1**

Time : 3 Hours

Max. Marks : 40

SECTION – A

Answer **all** questions. **Each** question carries **one** mark.

1. What are nitrenes ?
2. Write the structural formulae of
 - a) 4-Hydroxy butanoic acid
 - b) Hexa-1,5-diene-3-ol
3. What is heterolysis ?
4. What is a carbene ? Give one reaction in which it is generated. **(1×4=4 Marks)**

SECTION – B

Answer **any seven** questions. **Each** question carries **2** marks.

5. Explain the term electrophile and nucleophile with examples.
6. Illustrate 1, 2 and 1, 4 addition in the case 1, 3-butadiene.
7. Why do alkyl halides show SN reactions rather than electrophilic substitutions ?
8. Explain Lucas test.
9. What are the products of ozonolysis of 1-propene ?
10. Explain the hybridisation of carbon in acetylene.
11. Illustrate Hoffmans rule with an example.

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12. Explain Freund's reaction.
13. Give the preparation of primary and secondary alcohols using Grignard reagent.
14. Explain hydroxylation reactions in the case of alkene. **(2×7=14 Marks)**

SECTION – C

Answer **any 4** questions. **Each** question carries **3** marks.

15. Give the mechanism and stereochemistry of S_N^2 reaction of alkyl halides.
16. What are the products formed in the following reactions ?
- Acetylene treated with water in presence of sulphuric acid and mercurous sulphate.
 - 1,2-dichloroethane treated with aqueous KOH.
17. Write a note on structure and stability of carbonium ion.
18. Explain Fries rearrangement.
19. How can you prepare chloroform from acetone ?
20. Explain how the Wurtz reaction is useful in ascending the homologous series. Explain its limitations. **(4×3=12 Marks)**

SECTION – D

Answer **any 2** questions. **Each** question carries **5** marks.

21. Explain the following :
- Haworth synthesis
 - Wittig method
 - Peroxide effect
22. a) What are elimination reactions ?
b) Discuss the mechanism of E1 and E2 elimination with examples.
23. Explain the electron displacement effects in organic molecules.
24. Discuss the synthesis, properties and uses of glycerol. **(5×2=10 Marks)**
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