K23P 3074

Reg. No. : .....

Name : .....

I Semester M.Sc. Degree (C.B.C.S.S. – OBE – Regular) Examination, October 2023
(2023 Admission)
CHEMISTRY
MSCHE01C03 : Organic Chemistry I

Time : 3 Hours

Max. Marks : 60

SECTION – A

Answer **any 5** questions. **Each** question carries **3** marks :

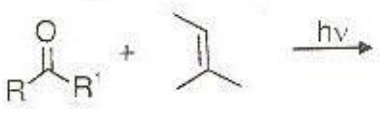
1. a) What are nitrenes ? **1**

   b) Suggest a suitable method for the preparation of nitrene. **2**

2. Explain mechanism of Hofmann-Martius rearrangement.

3. What are mesoionic compounds ?

4. Identify the product and propose a suitable mechanism for the conversion.



5. Discuss Favorski rearrangement reaction with suitable example.

6. a) What is Ipso substitution ? **1**

   b) Write a short note on Chichibabin reaction. **2**

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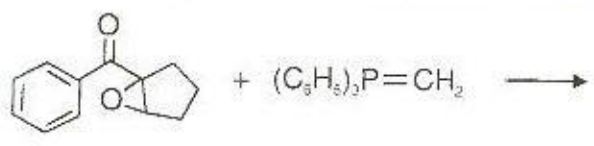
SECTION – B

Answer **any 3** questions. **Each** question carries **6** marks :

7. a) Predict the product and propose a suitable mechanism for the conversion. **4**



   b) State Bredt's rule. **2**

8. a) What is neighboring group participation ? **2**

   b) Neomenthyl chloride undergoes elimination reaction 40 times faster than menthyl chloride. Give reason for the observation. **4**

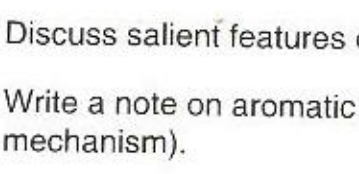
9. a) Explain the aromaticity of fulvalenes and azulenes. **4**

   b) What is homoaromaticity ? Write a compound showing cationic homo aromaticity. **2**

10. Discuss addition-elimination reaction and elimination-addition reaction mechanisms.

11. a) What is photo enolization ? **3**

    b) Identify the product in the reaction. **3**



SECTION – C

Answer **any 3** questions. **Each** question carries **9** marks :

12. Discuss the mechanism of following reactions :

    a) Schmidt rearrangement **3**

    b) Lossen rearrangement **3**

    c) Fries rearrangement. **3**

13. Discuss salient features of aliphatic S_N1 and S_N2 substitution reactions.

14. Write a note on aromatic electrophilic substitution reaction (Arenium ion mechanism).

15. a) Discuss Norrish type I and Norrish type II reactions. **6**

    b) Write a suitable mechanism for Barton reaction. **3**

16. a) Discuss Chugaev reaction mechanism. **3**

    b) Predict the products. **6**