

G 17003239



17003239

Reg. No.....

Name.....

M.Sc. DEGREE (C.S.S.) EXAMINATION, JULY 2017

Second Semester

Faculty of Science

Branch : Chemistry

AN2C06/AP2C06/CH2C06/PH2C06/POH2C06—ORGANIC REACTION MECHANISMS

(2012 Admission onwards)

[Common to all branches of Chemistry]

Time : Three Hours

Maximum Weight : 30

Section A

*Answer any ten questions.
Each question carries weight 1.*

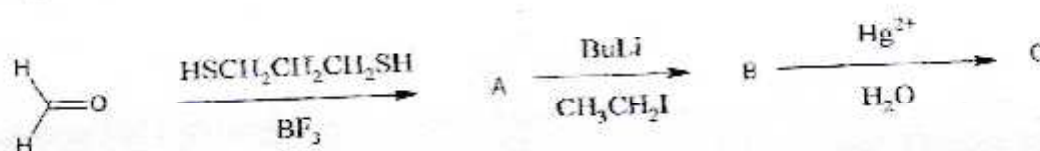
1. The reaction of 4, 4-disubstituted cyclo hexadienone with acid gives 3, 4-disubstituted phenol. Give a suitable mechanism ?
2. What product is obtained by treating ethyl acetate with metallic sodium in large volume of Toluene ? Give the mechanism involved in the reaction.
3. Adamantane is obtained from the dimer of dicyclopentadiene. Give a suitable mechanism of the reaction.
4. Starting with 2-methylcyclohexanone how 2, 6 dimethyl cyclo hexanone is obtained ?
5. What are non-classical carbocations ? Give an example. State a chemical reaction which undergoes via a nonclassical carbocations as intermediate.
6. Starting with cyclo hexanone how cyclo heptanone is obtained?
7. How are the following conversions are effected :—





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8. Give *one* example each for the insertion reaction and addition reaction of carbenes.
9. Name two common radical initiators (one peroxide and another azo) used in free radical reactions. Explain how these initiate a radical reaction.
10. What is Clemmensen reduction? What are the reagents used for the reduction? What is the mechanism of the reaction?
11. Give the mechanism of Stork enamine reaction. State one of its important applications in synthesis.
12. Benzamide on treatment with Bromine and alkali undergoes Hoffmann rearrangement but N-methyl Benzamide does not. Explain why?
13. Complete the following reactions and give the structures for A, B and C



(10 × 1 = 10)

Section B

Answer any **five** questions by attempting not more than **three** questions from each bunch.
Each question carries weight 2.

BUNCH 1

14. What are kinetic and thermodynamic enolates? Explain the use of Lithium and Boron enolates in Aldol condensations using suitable examples.
15. Draw the correlation diagram for electrocyclic ring closure of butadiene in thermal and photochemical modes.
16. Discuss briefly the use of Baldwin rules in cyclisation reactions taking appropriate examples.
17. Give the mechanism of Diels-Alder reaction with special emphasis to stereochemistry.

BUNCH 2

18. What is Noyori annulations reaction? What is its synthetic application?
19. Write briefly on Lossen rearrangement.
20. Write a note on synthetic applications of Grignard reagent.
21. Give the mechanism of Sommelet-Hauser rearrangements.

(5 × 2 = 10)

