

17P317

(Pages: 3)

Name.....

Reg. No.....

THIRD SEMESTER MSc. DEGREE EXAMINATION, NOVEMBER 2018

(Regular/Supplementary/Improvement)

(CUCSS - PG)

CC15P CH3 C11 - REAGENTS AND TRANSFORMATIONS IN ORGANIC CHEMISTRY

(Chemistry)

(2015 Admission onwards)

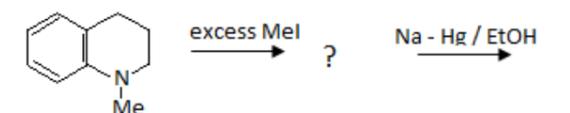
Time : Three Hours

Maximum : 36 Weightage

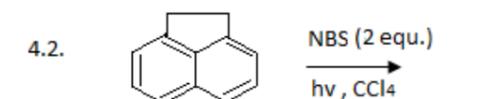
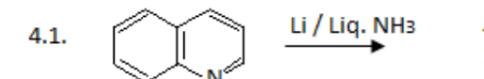
Section A

Answer *all* questions. Each question carries 1 weightage.

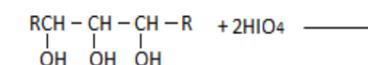
1. Explain sharpless asymmetric dihydroxylation with suitable examples.
2. Identify the missing products in these reactions.



3. Write down the steps involved in the synthesis of atripeptide 'gly - phe - Leu'.
4. Write the major products formed in the following reactions.



5. Explain the use of LDA in synthesis
6. How will you synthesise Aziridine? Give its applications.
7. What is Lemieux reagent? Explain its use in organic synthesis.
8. Give the difference in chain and step polymerization, with examples.
9. Explain with mechanism how DCC serve as a useful reagent for esterification.
10. How will you convert cellulose to Rayon.
11. Predict the product and write the mechanism:



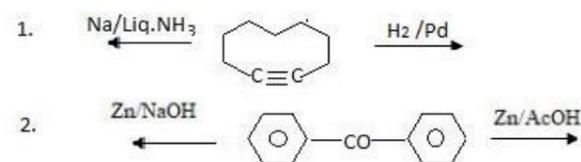
12. How does β -diketones react with hydrazine?

(12 x 1 = 12 Weightage)

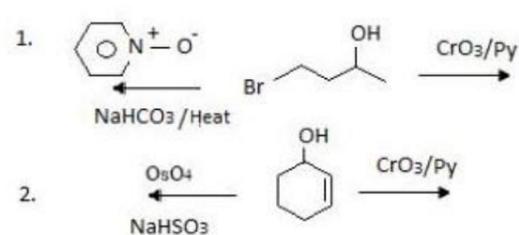
Section B

Answer any *eight* questions. Each question carries 2 weightage.

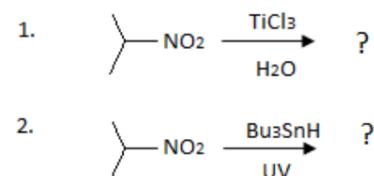
13. Illustrate the use of 1,3- dithiane in synthesis.
14. Give the steps involved in the synthesis of glutathione.
15. Explain the mechanism and migrating aptitude of groups in a Baeyer-Viliger rearrangement
16. Predict the products and write the mechanism.



17. Predict the products



18. Illustrate the structure of starch.
19. Is there any difference in the reactivity of NaBH₄ and Borane towards reduction reaction?
If so, explain why? Explain with an example.
20. Write a note on Swern oxidation and IBX oxidation with suitable example.
21. Predict the product and write the mechanism.



22. Explain the importance in Lithium dimethyl cuprate reagent in organic synthesis
23. Explain the mechanism involved in allylic bromination with NBS.
24. What is the reaction of LiAlH₄ on an epoxide? What product would you expect to predominate in the mixture for non-symmetrical epoxide?

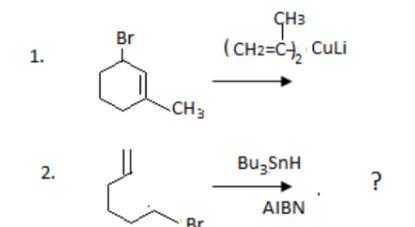
(8 x 2 = 16 Weightage)

(2)

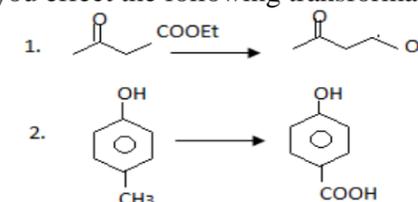
Section C

Answer any *two* questions. Each question carries 4 weightage.

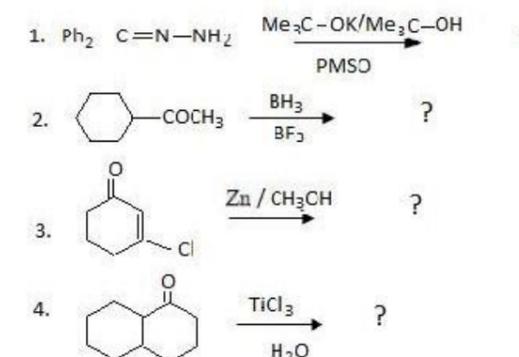
25. a. Write structures of the products



b. How will you effect the following transformations using protective groups?



26. Predict the product and give the mechanism for the following reactions.



27. Explain with mechanism:

1. Dienone – phenol rearrangement.
2. Woodward and Prevost hydroxylation.
3. Sonogashira-reaction.
4. Beckmann rearrangement.

28. Discuss a general method for the synthesis of thiazole, pyrazole, cytosine and indole.

(2 x 4 = 8 Weightage)

(3)