

16P311

(Pages:3)

Name.....

Reg. No.....

**THIRD SEMESTER M.Sc. DEGREE EXAMINATION, OCTOBER 2017**

(Regular/Supplementary/Improvement)

(CUCSS - PG)

**CC15P CH3 C11 - ORGANIC TRANSFORMATIONS AND REAGENTS**

(Chemistry)

(2015 Admission Onwards)

Time: Three Hours

Maximum: 36 Weightage

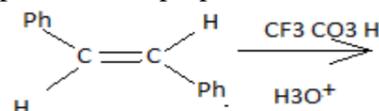
**Section A**

(Answer *all* questions. Each questions has 1 weightage)

1. Suggest a suitable reagent for the following conversion.



2. Give one synthetic application of Tri-butyltinhydride .  
3. Write a note on Lindlar's catalyst.  
4. Write any one method for the synthesis of Adenine.  
5. How can dipolar cycloaddition to be used to prepare pyrazoles.  
6. Identify the product with proper stereochemistry.



7. How will you prepare DDQ from quinone ?

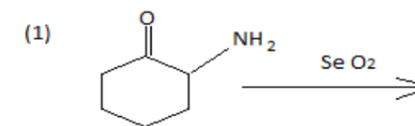
8. Write a note on stereo regular polymers.  
9. Explain the importance of PTC in organic synthesis.  
10. What is Baeyer-Villiger oxidation? Write the mechanism.  
11. Give the method to convert cellulose to rayon.  
12. What is the function of using crown ethers in KMnO<sub>4</sub> oxidation.

(12 x 1 = 12 weightage)

**Section B**

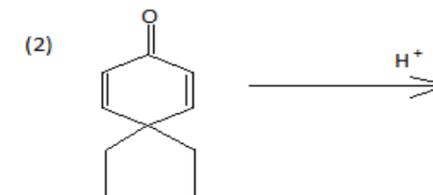
(Answer *any eight* questions. Each question carries 2 weightage)

13. What is Birch reduction? Discuss the synthetic applications.  
14. Predict the product and write the mechanism.



(1)

Turn Over



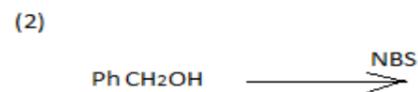
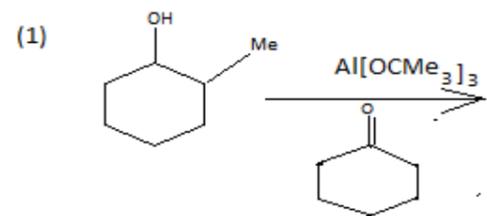
15. Explain Negishi coupling.  
16. Outline the synthesis of isoquinoline by Bischler-Napieralski method.  
17. Describe the uses of DCC And organocopper reagents in organic synthesis.  
18. Write a note on Woodward and Prevost hydroxylation.  
19. Explain Merrifield solid phase peptide synthesis.  
20. Write a note on Sharpless asymmetric epoxidation.  
21. Starting from cyclohexene how will you obtained trans and cis 1,2 dihydroxy cyclohexane. Give mechanism.  
22. Write the stereochemical structure of the oxime which gives N-methyl benzamide on Beckmann rearrangement. Write the mechanism of the reaction.  
23. Write a note on oxidation using lead tetra acetate.  
24. Point out the key structural difference between cellulose and starch.

(8 x 2 = 16 weightage)

**Section C**

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

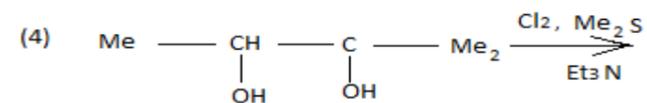
25. Predict the product and write the mechanism.



(2)

(3)

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26. Explain the reaction, mechanism and applications for the following reactions.
- (1) Favorski
  - (2) Fries rearrangement
  - (3) Orton rearrangement
  - (4) Wagner- Meervein rearrangement.
27. Bring out the applications of the following reactions with appropriate examples.
- (1) Chromium based oxidants for selective oxidation of alcohols to aldehyde.
  - (2) Dissolving metal reduction of aromatic and conjugated systems.
28. (1) Explain  $1^\circ$ ,  $2^\circ$  and  $3^\circ$  structure of proteins
- (2) Write the steps involved in the synthesis of glutathione.

(2 x 4 = 8 weigtage)

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