19P3020

Reg. No ..... Name .....

M. Sc DEGREE END SEMESTER EXAMINATION - OCTOBER 2019

SEMESTER 3 : CHEMISTRY / PHARMACEUTICAL CHEMISTRY

COURSE : **16P3CHET10 / 16P3CPHT10 : ORGANIC SYNTHESES**

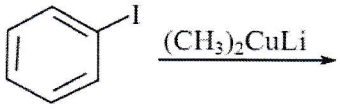
(For Regular - 2018 Admission and Supplementary - 2016/2017 Admissions)

Time : Three Hours Max. Marks: 75

Section A

Answer any 10 (2 marks each)

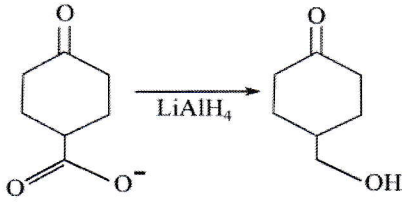
1. Give examples of Ullmann reaction and Henry reaction?
2. Write the product



3. Complete the reaction

$$R^2X + R' - SnCl_3 \longrightarrow ?$$

4. Compare the basicity of pyrrole with conventional amines.
5. Thiophene does not exhibit the properties seen for conventional thioethers. Why?
6. Explain the role of protecting groups in organic synthesis.
7. Explain how you will accomplish the following synthesis.



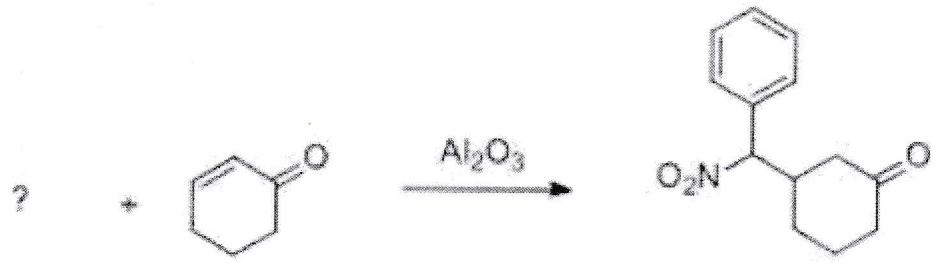
8. Give the synthetic equivalents for the following synthons.

9. Explain the role of ion-ion interaction in molecular recognition.
10. Define tetrahedral recognition. Cite an example.
11. Give the preparation and application of PDC
12. What is Birch Reduction ?
13. What is tri-methylallylsilane? Explain the synthetic application.

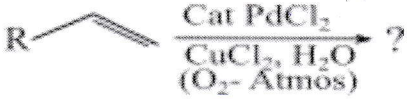
(2 x 10 = 20)

Section B
Answer any 5 (5 marks each)

14. Complete the reagents and explain the mechanism of the following reaction?



15. Discuss the amphoteric nature of Imidazole.
16. Write a note on Pauson-Khand reaction.
17. Write a short on chemo- & regioselective protection and deprotection.
18. Briefly discuss the synthesis of amines based on retrosynthetic analysis.
19. Apply retrosynthetic analysis and devise a synthetic route for d-luciferin.
20. Explain Sharpless epoxidation with mechanism
21. Convert and write the mechanism



(5 x 5 = 25)

Section C
Answer any 2 (15 marks each)

22. Write an essay on metal mediated C-C and C-X coupling reactions with reference to
a) Negishi Sonogashira b) Stille Coupling c) Nozaki-Hiyama reaction
23. a) Write a note on the salient features and advantages of solid phase peptide synthesis.
b) Outline the steps in the synthesis of Gly-Ala-Val using the SPPS procedure.
24. Discuss the different interactions and types of receptors in supramolecular chemistry.
25. Discuss the structure, preparation, properties and synthetic applications of
a) $LiAlH_4$, b) red-Al, c) DIBAL-H.

(15 x 2 = 30)