20P312 (Pages: 2) Name……..

Reg. No…….…….

THIRD SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER 2021

(CUCSS-PG)

(Regular/Supplementary/Improvement)

CC19P CHE3 C11 - REAGENTS AND TRANSFORMATIONS ON ORGANIC CHEMISTRY

(Chemistry)

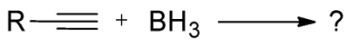
(2019 Admission onwards)

Time: Three Hours Maximum: 30 Weightage

Section A

Answer any ***eight*** questions. Each question carries 1 weightage.

1. Predict product of following reaction with mechanism.



2. Outline the synthesis of quinoline
3. Discuss the synthetic applications of DCC.
4. NBS is very selective reagent for allylic bromination. Give mechanistic explanation.
5. Explain Dess Martin oxidation.
6. Give any two applications of Wilkinson's catalyst.
7. Write a note on reaction between diimide and cyclohexene.
8. Brief the applications of LDA.
9. Write a note on reduction of multiple bond in the presence of Lindlar's catalyst.
10. Outline any two methods for formation of carbanions. Explain their stability.

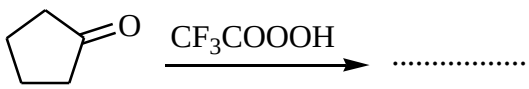
(8 × 1 = 8 Weightage)

Section B

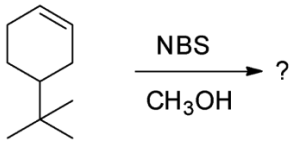
Answer any ***six*** questions. Each question carries 2 weightage.

11. Workup the ozonide of 1-methyl cyclohexene under oxidative conditions.
12. Suggest a method for converting 2-butyne into (a) cis-2-butene (b) trans-2-butene
13. Discuss with appropriate mechanism.

    (a) the McMurry coupling (b) Wolff Kishner reduction
14. Discuss the mechanism of cationic polymerization reaction with suitable examples.
15. How is cellulose converted to rayon?
16. Discuss Birch reduction of Anisole.
17. Complete the reaction stating reasons:



18. Predict product of following reaction with mechanism.



(6 × 2 =12 Weightage)

Section C

Answer any ***two*** questions. Each question carries 5 weightage.

19. (a) Write the mechanism and stereochemistry of epoxidation of alkenes by peracids.

    (b) Discuss the mechanism of decarboxylation of monocarboxylic acids with lead tetraacetate and based on mechanism explain the formation of alkane, acetate and alkene during the reaction.

20. (a) Explain Fischer's indole synthesis with mechanism.

    (b) Explain the synthesis of uric acid and caffeine.

21. Discuss the principle of Merrifield solid phase peptide synthesis with suitable illustration.

22. Explain the mechanism of a) Heck, b) Stille and c) Suzuki cross coupling.

(2 × 5 = 10 Weightage)

****