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(Pages : 2)

Name.....

Reg. No.....

THIRD SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY) EXAMINATION, NOVEMBER 2023

(CBCSS)

Chemistry

CHE 3E 01—SYNTHETIC ORGANIC CHEMISTRY

(2019 Admission onwards)

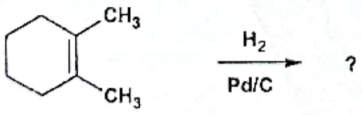
Time : Three Hours

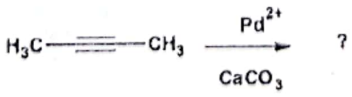
Maximum : 30 Weightage

Section A

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

1. What is Swern oxidation ?
2. Discuss the applications of Raney Nickel.
3. Complete the reactions with stereochemistry :

(a) 

(b) 

4. What is Dickmann cyclization ?
5. What are functional group equivalences ? Give an example.
6. What is umpolung reaction ?
7. How palladium is useful in coupling reactions ?
8. What are the applications of Heck reaction ?

Turn over

9. Distinguish between chemo and region selectivity.

10. Discuss any *two* methods of synthesis of benzofuran.

(8 × 1 = 8 weightage)

Section B

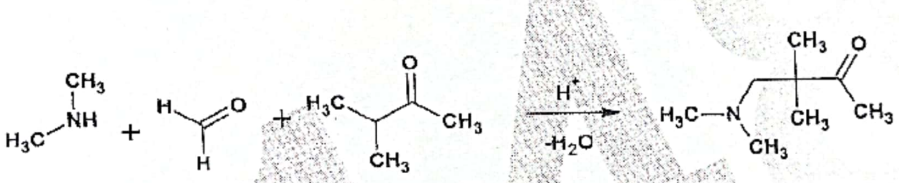
Answer any **six** *questions.*

Each question carries a weightage of 2.

11. Briefly explain the Sharpless asymmetric epoxidation and its advantages.

12. Briefly explain the synthetic applications of alkylboranes.

13. Explain the mechanism of the following reaction :



14. Compare the reactivity of C=O group in aldehydes, ketones and carboxylic acids.

15. Discuss the mechanism of Hiyama coupling.

16. Illustrate the synthesis of longifolene.

17. Discuss the principle of retrosynthetic analysis.

18. Discuss the structure and synthesis of Vitamin C.

(6 × 2 = 12 weightage)

Section C

Answer any **two** *questions.*

Each question carries a weightage of 5.

19. Explain the use of hydrogen peroxide and aluminum isopropoxide in organic oxidation reactions.

20. What is Aldol condensation ? Discuss its mechanism. What are its applications ?

21. Explain the various methods of elements of organic synthesis.

22. Explain the retrosynthetic analysis and synthesis of propranolol from 1-naphthol.

(2 × 5 = 10 weightage)