K-404

Total Pages : 4 Roll No. .....

MCH-602

SYNTHETIC ORGANIC CHEMISTRY-I

M.Sc. Chemistry (MSCCH)

3rd Semester Examination, 2023 (Dec.)

Time : 2 Hours] **[Max. Marks : 35**

Note : This paper is of Thirty Five (35) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein. Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

SECTION–A

(Long Answer Type Questions)

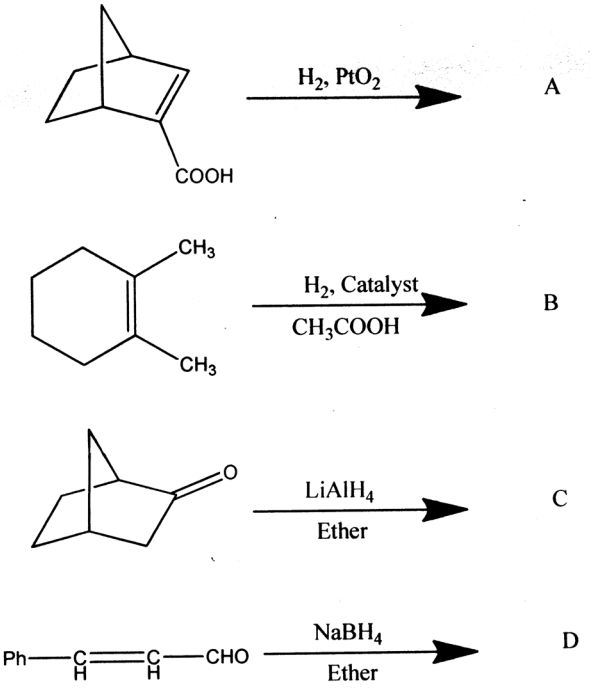
Note : Section 'A' contains Five (05) long answer type questions of Nine and Half (9½) marks each. Learners are required to answer any Two (02) questions only. (2×9½=19)

1. Write notes on the following :

(a) Robinson annulation.

(b) Aldol reaction.

2. Complete following reactions :



3. What is protecting group? Discuss briefly the role of protecting group in organic synthesis.

4. Write notes on the following :

(a) Amine ($-NH_2$) protecting groups

(b) Grignard reagent

5. (a) What is Simmons-Smith reaction? Give at least two examples.

(b) Birch reduction.

SECTION–B

(Short Answer Type Questions)

Note : Section 'B' contains Eight (08) short answer type questions of Four (04) marks each. Learners are required to answer any Four (04) questions only. (4×4=16)

1. Write short notes on the following :

(a) Epoxidation of alkene.

(b) Oxidation of alkane.

2. Discuss the mechanism of homogenous catalytic hydrogenation of alkenes.

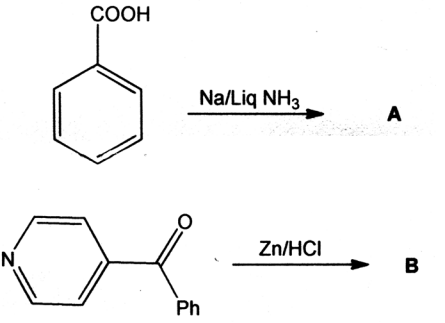
3. Explain briefly the oxidation of alcohols with at least three types of reagents.

4. Discuss the mechanism of Meerven-Pondroff-Verley reduction.

5. Discuss Wittig reaction with a suitable example. Explain its mechanism.

6. Explain briefly the reaction of alkyl boranes with carbon monoxides.

7. Complete the following reactions :



8. Give the preparation of trimethylsilyl enol ethers. Discuss the important application of trimethyl silyl enol ether.