S-452

Total Pages : 3 Roll No. .....

MCH-602

Synthetic Organic Chemistry-I

M.Sc. Chemistry (MSCCH)

3rd Semester Examination, 2022 (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.

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. What is protecting group? Describe the role of protecting group in organic synthesis. Discuss amino protecting group. (9½)

2. Explain the use of fragmentation reaction in carbon-carbon double bond formation with examples. (9½)

3. Discuss the mechanism of the following reactions :

(a) Suzuki Coupling.

(b) Robinson annulation. (5+4½)

4. Write notes on the following :

(a) Functionalization of alkynes.

(b) Functionalization of aromatic compounds. (5+4½)

5. Discuss oxidation of alcohols with the following reagents :

(a) Chromic acid.

(b) Chromium IV oxide.

(c) Alkoxysulphonium salts. (3+3+3+2)

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. Identify 'A' and 'B' in the following reaction :

$$\text{Glycerol} \xrightarrow[H^+/\text{Catalyst}]{CH_3COCH_3} A \xrightarrow{LIAlH_4} B \qquad (2+2)$$

2. Write the important applications of trimethyl silyl iodide. 4

3. Write a note on oxidation of boranes to alcohols. 4

4. Discuss cope elimination with a suitable example. 4

5. What is dissolving Metal Reduction? Discuss Birch Reduction by taking example of the anisole. 4

6. Write a note on benzylic oxidation. 4

7. Write short notes on :

(a) Oppenauer oxidation.

(b) Swern oxidation. (2+2)

8. Discuss the mechanism of homogeneous hydrogenation. 4