

A-0565

Total Pages : 4

Roll No.

MCH-602

M.Sc. CHEMISTRY (MSCCH)

(Synthetic Organic Chemistry-I)

3rd Semester Examination, Session December 2024

Time : 2:00 Hrs.

Max. Marks : 35

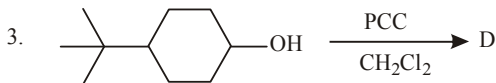
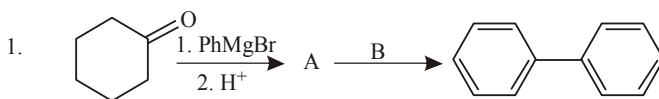
Note :- This paper is of Thirty Five (35) marks divided into Two (02) Sections 'A' and 'B'. Attempt the questions contained in these Sections according to the detailed instructions given therein. *Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer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

Section-A

Long Answer Type Questions $2 \times 9\frac{1}{2} = 19$

Note :- Section 'A' contains Five (05) Long-answer type questions of Nine and Half ($9\frac{1}{2}$) marks each. Learners are required to answer any two (02) questions only.

- Write notes on the following :
 - Hydroxyl protecting groups
 - Application of organo silanes
- Complete the following reactions :



- Write notes on the following :
 - Knoevenagel condensation.
 - Wittig reaction
- Classify hydride transfer reagents (in reduction) and give at least one example of reduction using each of these reagents.
 - Briefly write about Suzuki coupling reaction.

5. Write notes on the following :
- (a) Michael addition
 - (b) Oxidation with manganese dioxide

Section-B

Short Answer Type Questions 4×4=16

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.

1. Write a short notes on the following :
 - (a) 1, 2-dihydroxylation by OsO_4
 - (b) Epoxidation
2. Discuss the mechanism of heterogeneous catalytic hydrogenation of alkenes.
3. Explain Oppenauer oxidation with mechanism.
4. Write notes on the following :
 - (a) Grignard reagents
 - (b) Stork enamine reaction
5. Discuss Shapiro reaction with a suitable example. Explain its mechanism.
6. Discuss hydroboration reactions in brief.

7. Write a short notes on the following :
- (a) Birch reduction
 - (b) Clemmensen reduction
8. Explain the role of carbene in carbon-carbon bond formation in organic synthesis.
