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[Roll No.]

CHE-552

**M.Sc. (Chemistry) IInd Year
Examination Dec., 2023**

SYNTHETIC ORGANIC CHEMISTRY

Time : 2 Hours]

[Max. Marks : 70

*Note :- This paper is of Seventy (70) marks divided into two (02) Sections 'A' and 'B'. Attempt the questions contained in these Sections according to the detailed instructions given there in. **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) 2×19=38

*Note :- Section 'A' contains Five (05) Long-answer type questions of Nineteen (19) marks each. Learners are required to answer any *two* (02) questions only.*

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(1)

P.T.O.

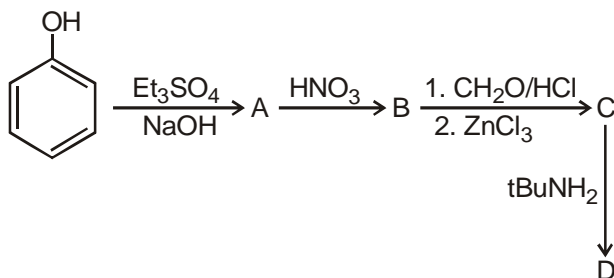
1. Write the mechanism of any *two* of the following reactions :
 - (a) Michael Addition
 - (b) Knoevenagel condensation
 - (c) Aldole condensation
2. What is the protecting group ? Discuss the mechanism of protection and deprotection of alcohols as trimethyl ethers.
3. What is the catalytic hydrogenation ? Discuss the various type hydrogenation of alkenes.
4. Give the Mechanism of the any *two* following reaction :
 - (a) Birch Reduction
 - (b) Stork Enamine synthesis
 - (c) Clemmensen reduction
5. What is the catalytic Oxidation ? Discuss the Mechanism of the Ozonolysis of alkenes.

Section-B

(Short Answer Type Questions) 4×8=32

Note :- Section 'B' contains Eight (08) Short-answer type questions of Eight (08) marks each. Learners are required to answer any *four* (04) questions only.

1. What is umplong ? Give any two organic synthesis using umplong reagents.
2. What is Functional Group interconversion (FGI) ? Discuss the FGI with the suitable example.
3. Give the mechanism of the following reaction :
 - (a) Shapiro reaction
 - (b) Wittig reaction
4. Identify the Product A, B, C and D of the following reaction :



5. Discuss the regioselectivity of the organic reactions.
6. Attempt any *two* of the following :
 - (a) Homotopic face
 - (b) Cram's rule
 - (c) Felkin-anh model

7. Write short note on the following :
- (a) Asymmetric diels- alder reaction
 - (b) Meerwein-Ponndorf-Verley reduction
8. Discuss the carbon-carbon single bond formation reaction with suitable example.
