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**School of Basic Sciences**

Master of Science in Chemistry

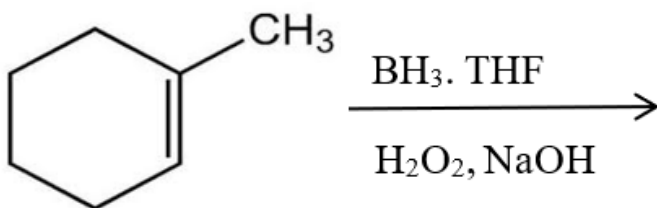
Mid Term Examination - Mar 2024

Duration : 90 Minutes

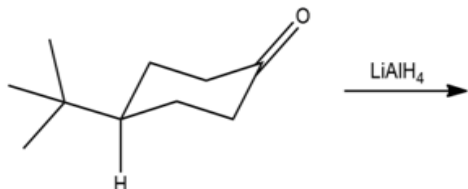
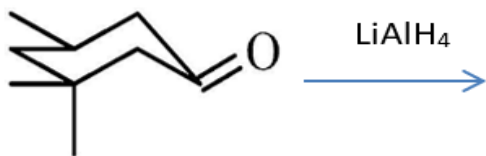
Max Marks : 50

**Sem IV - MSCH6002 - Reagents and Heterocyclic Chemistry**General Instructions*Answer to the specific question asked**Draw neat, labelled diagrams wherever necessary**Approved data hand books are allowed subject to verification by the Invigilator*

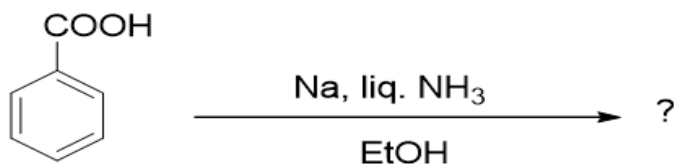
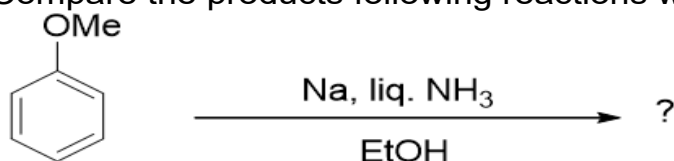
- 1) Summarize the following functional groups in decreasing order of reduction with  $\text{LiAlH}_4$ . Ester, Acid chloride, Carboxylic acid and Carbonyl group K2 (2)
- 2) Why the reaction with LAH is carried out at anhydrous condition and how LAH is prepared in industry? K1 (3)
- 3) Illustrate how you synthesize 9-BBN and explain its use. K2 (4)
- 4) Explain the mechanism of reduction of propene using Wilkinson's catalyst. K2 (6)
- 5) Utilizing Hydroboration reaction, identify the product with mechanism and stereochemistry of following reaction. K3 (6)



- 6) Applying the reduction mechanism of LAH predict the product of following reactions with stereochemistry. K3 (9)



- 7) Compare the products following reactions with mechanism. K4 (8)



- 8) Analyze the mechanism and stereochemistry of Prevost reaction for 2-methylbut-2-ene. K4 (12)

**OR**

Analyze the products of following reactions with mechanism. K4 (12)

