

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)

CLASS: IMSc
BRANCH: CHEMISTRY

SEMESTER: V
SESSION : MO/2018

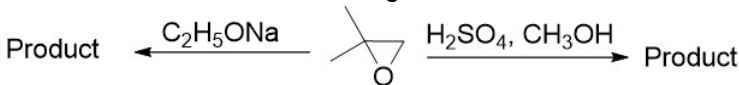
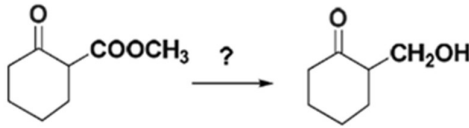
SUBJECT : IMC5005-ORGANIC CHEMISTRY II

TIME: 1.5 HOURS

FULL MARKS: 25

INSTRUCTIONS:

1. The total marks of the questions are 30.
2. Candidates may attempt for all 30 marks.
3. In those cases where the marks obtained exceed 25 marks, the excess will be ignored.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. The missing data, if any, may be assumed suitably.

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- Q1 (a) Describe a method to detect peroxide in an ether sample. [2]
(b) 2.3 gm ether was heated with Conc. HI and then with alcoholic AgNO₃. The AgI formed was weighed 0.82 gm. Calculate the % of methoxy group in the ether. [3]
- Q2 (a) Write the product obtained from the following reaction. [2]
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- (b) Justify your answer for the above products. [3]
- Q3 (a) Using protecting group solve the following problem. [2]
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- (b) 'Aldehyde and ketone give mainly nucleophilic addition while carboxylic acid derivatives give the nucleophilic substitution' - justify the statement with example. [3]
- Q4 (a) How does selectivity of LiAlH₄ improve for reduction of carboxylic acid to aldehyde? [2]
(b) Compare and contrast between 1,2 and 1,4 addition to α,β-unsaturated ketone. [3]
- Q5 (a) Give the mechanism for alkaline hydrolysis of methyl 2,4,6-tri-t-butyl benzoate. [2]
(b) Write short note on thermal behavior of dicarboxylic acids. [3]
- Q6 (a) What happen when δ halo carboxylic acid is heated with sodium hydroxide? [2]
(b) Describe the mechanism of HBr addition with CH₂=CH-COOH. [3]

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