

B.Sc. (Honours) Examination, 2017

Semester-IV

Chemistry (Honours)

Course: BCHC-42

(Organic Chemistry)

Time: Three Hours

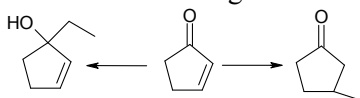
Full Marks: 30

Questions are of value as indicated in the margin.

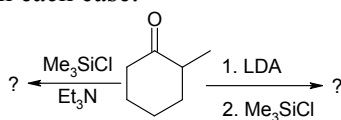
Answer *three* questions taking *any one question* from *each of the unit*.

Unit-I

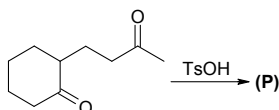
1. a) i) Suggest suitable reagents for the following conversions: 1



- ii) Predict the product(s) in each case: 1

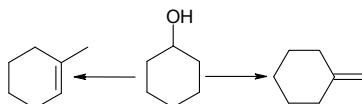


- b) Predict the structure of (P):

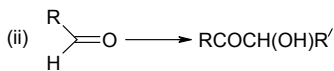
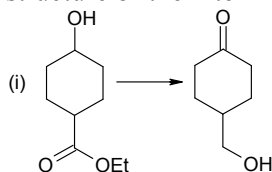


“Some other products may also be possible in addition to (P)”. Do you agree? Justify your answer. Why product (P) is most reasonable to be formed? 2

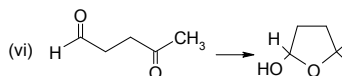
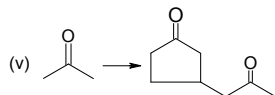
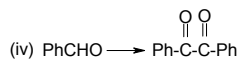
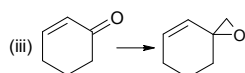
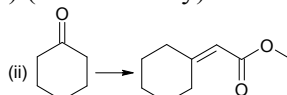
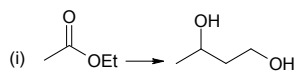
- c) Propose synthetic routes for the following conversions. Give most suitable method in each case. Justify your answer. 2



- d) Carry out following conversions. Suggest reagents and reaction condition properly. Give the structure of the intermediate product(s), if there is any. 2x2



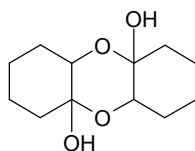
2. a) Propose synthetic protocol in each case. Mention reagents and reaction condition. Provide the structure of the intermediate product(s) (if there is any) for each synthesis: 1.5x6



P.T.O.

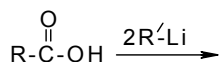
(2)

- b) Identify the starting material(s) from which given compound can be synthesized. Give mechanism. 1

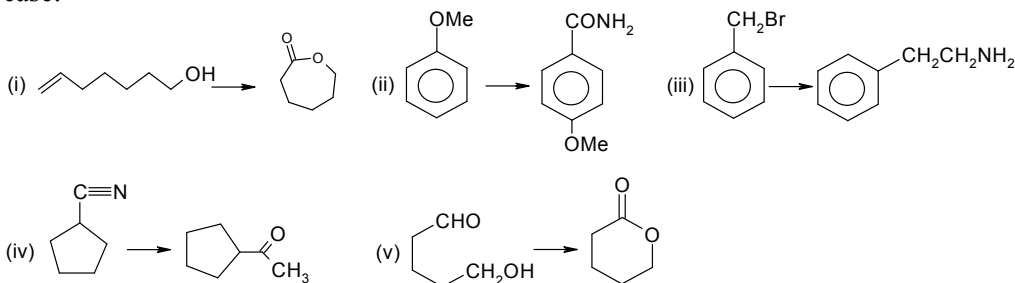


UNIT-II

1. a) What is Fischer esterification reaction? Explain with suitable example. Discuss its mechanism. 4
b) Give the structure of the product(s) for the following case. Suggest plausible mechanistic pathway. 4

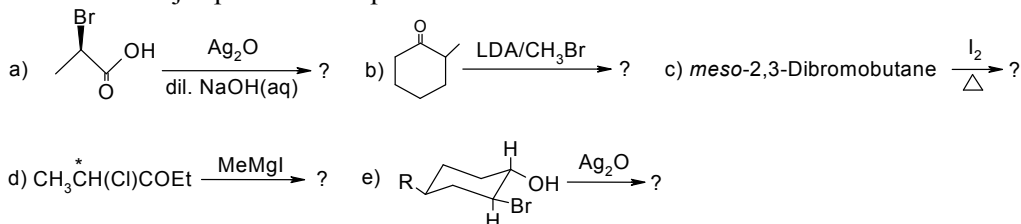


- c) What do you mean by trans esterification? Discuss with suitable example. 2
2. How would you accomplish following multistep conversions using the indicated starting materials and necessary reagents. Give the structure of the intermediate product(s) in each case: 5x2



UNIT-III

1. Predict the major product with plausible mechanism. 5x2



2. a) Account for the following fact:
“(–)-Atrolactic acid is obtained as the major product when CH_3MgI reacts with the ester formed by the reaction of benzoylformic acid with (–)-2-octanol”. 5
b) Predict the structure of the (major) product with appropriate stereochemistry (if applicable) in each case. Also suggest plausible mechanistic pathway in each case. 2.5x2

