



UNIVERSITY OF JAFFNA, SRI LANKA
FACULTY OF ALLIED HEALTH SCIENCES

FIRST YEAR SECOND SEMESTER EXAMINATION IN BPharmHons-2022
PHACH 1264 PHARMACEUTICAL CHEMISTRY II

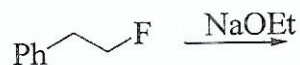
Date: 12 JUN 2024

Time: 3 Hours

ANSWER ALL THE SIX QUESTIONS

1. 1.1 Define 'Rearrangement Reaction' with an example. (20 Marks)
- 1.2 List the types of Rearrangement Reaction and diagrammatically show each of the rearrangement reactions. (40 Marks)
- 1.3 Briefly discuss the followings
 - 1.3.1 Nucleophilic Aromatic Substitution reaction. (20 Marks)
 - 1.3.2 Addition reaction. (20 Marks)

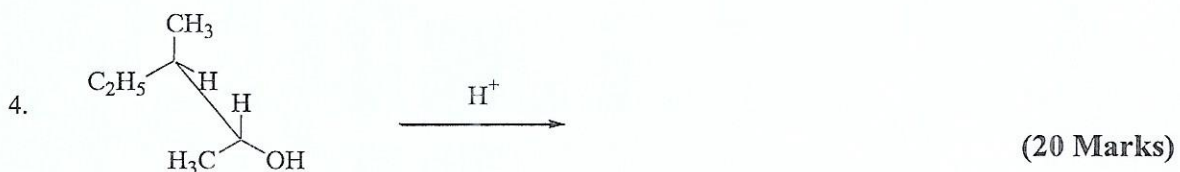
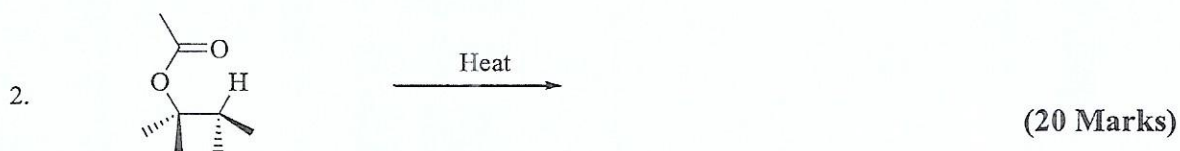
2. Considering the following substrate and reagents, answer the following questions.



- 2.1 Predict the type of reaction with justification. (20 Marks)
 - 2.2 Define the reaction mentioned in 2.1. (10 Marks)
 - 2.3 Give the reaction mechanism. (30 Marks)
 - 2.4 Specify the stereochemistry of the product. (10 Marks)
 - 2.5 Draw the energy level diagram and indicate the transition state. (30 Marks)
3. 3.1 Draw the structure of the following compounds.
- 4.1.1 1-ethoxybutane
 - 4.1.2 1-methoxy-4-methylpentane (20 Marks)
- 3.2 Briefly explain why ethers and aldehyde show variable in boiling point with similar molecular mass. (30 Marks)
- 3.3 Give three (03) preparation methods of ether. (30 Marks)
- 3.4 List the pharmaceutical applications of ether. (20 Marks)

4. 4.1 Give two examples for natural compounds which contain heterocyclic compounds. (10 Marks)
- 4.2 Answer the followings with regard is Indole:
- 4.2.1 Describe the physical and chemical properties. (20 Marks)
- 4.2.2 List two (02) reactions. (20 Marks)
- 4.2.3 Explain why electrophilic substitution takes place at position C-3. (20 Marks)
- 4.2.4 Explain the therapeutic importance. (30 Marks)

5. Give the final products, type of the reaction and mechanism of the following reactions.



6. 6.1 Write short notes on the following.

6.1.1 Pyridine (35 marks)

6.1.2 Carboxylic acid derivatives (35 Marks)

6.2 Compare the properties of the followings:

6.2.1 Alkene Vs alkyne (15 Marks)

6.2.2 Alkyl halide vs alcohol (15 Marks)