

UNIVERSITY OF JAFFNA, SRI LANKA  
FACULTY OF ALLIED HEALTH SCIENCES  
SECOND YEAR FIRST SEMESTER EXAMINATION IN BPharmHons – 2020  
PHACH 2124 PHARMACEUTICAL CHEMISTRY II

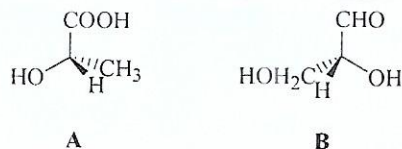
Date: 20 JUN 2022

Time: 3 Hours

ANSWER ALL THE SIX QUESTIONS

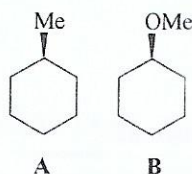
1. 1.1 Define "Reaction Mechanism". (10 Marks)  
1.2 List the factors that influence the rate of organic reactions. (30 Marks)  
1.3 Briefly explain how does Gibbs free energy affect the equilibrium. (60 Marks)

2. 2.1 2.1.1 Draw the Fischer projections of compounds A and B. (40 Marks)



- 2.1.2 Assign a configuration, D or L to each of the above mentioned 2.1.1 compounds. (20 Marks)

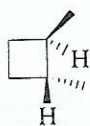
- 2.2 2.2.1 Draw the chair conformation of compounds A & B. (20 Marks)



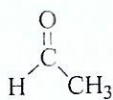
- 2.2.2 State the most stable compound in 2.2.1 with justification. (20 Marks)

3. 3.1 3.1.1 Define Chirality. (10 Marks)

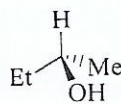
3.1.2 State whether the following compounds are chiral or achiral with justification.



A



B



C

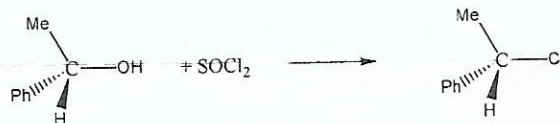
(45 Marks)

3.2 3.2.1 Define hydrocarbon. (10 Marks)

3.2.2 Write down a preparation method of naphthalene. (20 Marks)

3.2.3 Briefly describe the medicinal applications of naphthalene. (15 Marks)

4. 4.1 Considering the following substrate and reagents and answer the following questions.



4.1.1 Write down the type of the reaction. (30 Marks)

4.1.2 Give the reaction mechanism and specify the stereochemistry of the product. (40 Marks)

4.1.3 Briefly explain how does this reaction differ from other nucleophilic substitution reaction. (30 Marks)

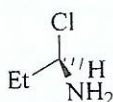
5. 5.1 Define the followings.

5.1.1 Enantiomer

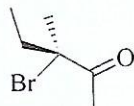
5.1.2 Epimer

(20 Marks)

5.2 Assign R or S configuration to each of the following compounds.



5.2.1



5.2.2

(30 Marks)

5.3 State the stereochemical relationship between the following molecules with justification.



6. 6.1 Briefly describe the medicinal applications of thiophen. (40 Marks)
- 6.2 Give the different types of reactions that occur in thiophen. (30 Marks)
- 6.3 Write down the preparation methods of thiophen. (30 Marks)