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THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF HEALTH SCIENCES
DEPARTMENT OF PHARMACY
ACADEMIC YEAR 2022/2023 – SEMSETER II

BACHELOR OF PHARMACY HONOURS
FMU6505 – MEDICINAL CHEMISTRY- LEVEL 6
FINAL EXAMINATION
DURATION: THREE (03) HOURS

DATE: 05TH SEPTEMBER 2023 TIME: 1.30 P.M. – 4.30 P.M.

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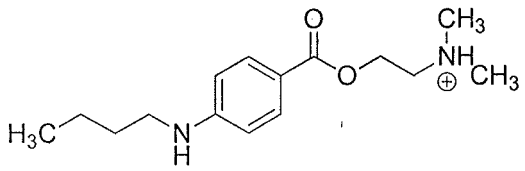
Part B – Short Answer Questions (20 Marks)

1.

1.1 What is the most important factor that determines the onset of action in anesthetic drugs? (02 marks)

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1.2 Write the dissociation reaction for the following local anesthetic drug. (05 marks)

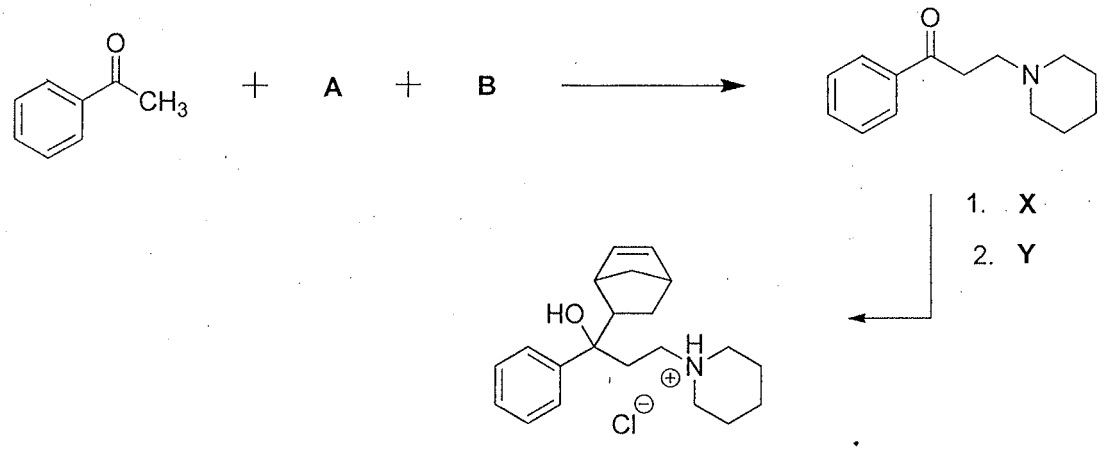


1.3 Show the equation relates for the factor mentioned in 1.1 with the pH value of the medium.

(03 marks)

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2. Give missing reagents (X and Y) and structures (A and B) in the following synthesis of anti parkinsonism agent, Biperiden hydrochloride. (10 marks)



A	B

C	D

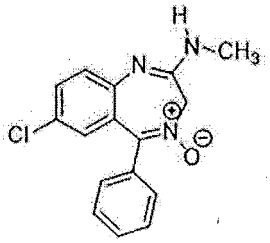
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Part C – 04 Structured Essay Questions (60 Marks)

1.

1.1 What are the types of GABA receptors? (02 marks)

1.2 Using the given structure of Chlorodiazepoxide answer the following questions.



a) Draw the structures for the two active forms generated during the metabolism of Chlordiazepoxide. (08 marks)

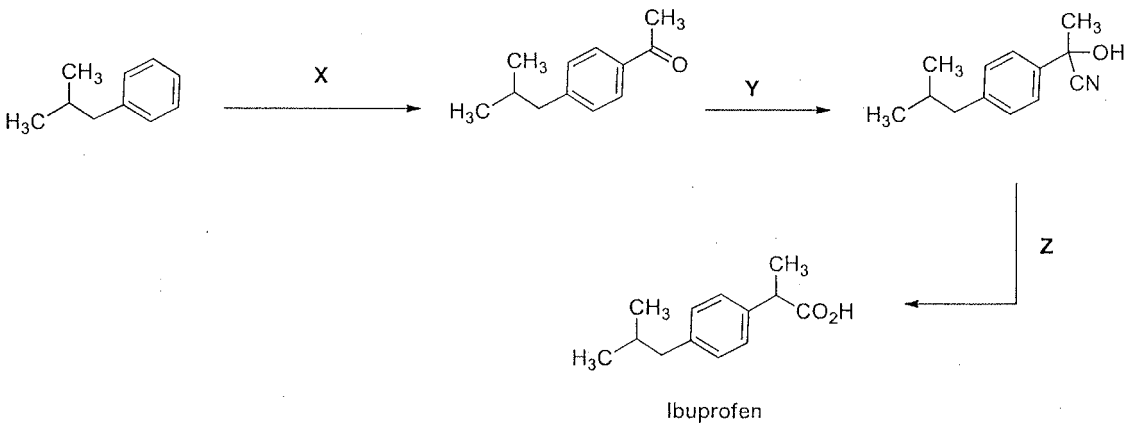
b) Based on the SAR of Benzodiazepines, circle the key structural units of Chlorodiazepoxide for its activity. (05 marks)

2.

2.1 What is an inflammatory response? (02 marks)

2.2 List two (02) steroid-based drugs used in inflammatory responses. (04 marks)

2.3 The following reaction sequence is used for the synthesis of Ibuprofen. What are the reagents (X, Y, and Z) used in each step? (09 marks)



Ibuprofen

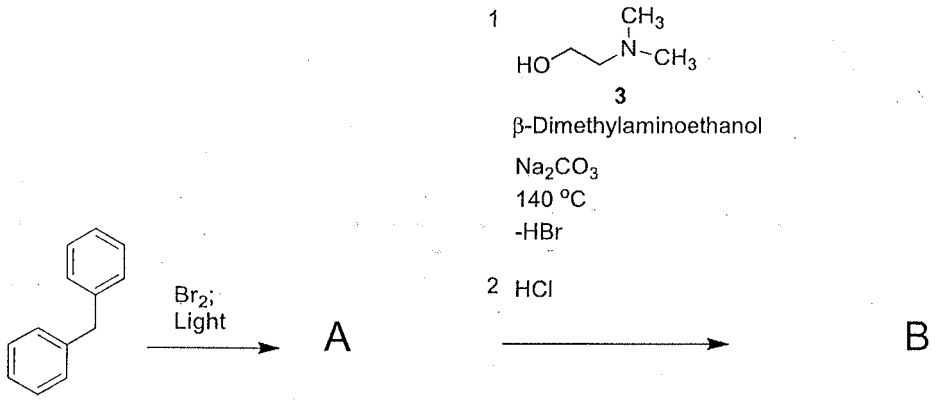
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3.

3.1 What is the basis for the categorization of histamines and Histamine H1-Receptor antagonists? (02 marks)

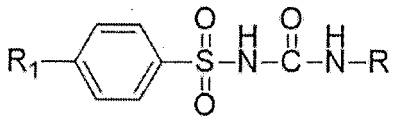
3.2 Draw the general structure of H1-receptor antagonists. (03 marks)

3.3 Diphenylhydramine is a commonly used histamine H1-receptor antagonists. In the synthesis of this drug following reaction scheme is used. Draw the products (A and B) of this reaction scheme. (10 marks)



4.

The general structure of the Sulfonylureas is given below.



4.1 Draw the structures of two (02) general starting materials that's can be used to synthesize Sulfonylureas drugs. (04 marks)

4.2 What is the most common limitation of insulin treatment for type II diabetes? (04 marks)

4.3 What are the two (02) intermediate forms of insulin forms during the biosynthesis of insulin? (04 marks)

4.4 List three (03) key structural features of an insulin molecule. (03 marks)