

UNIVERSITY OF JAFFNA, SRI LANKA

BACHELOR OF PHARMACY

FOURTH YEAR SECOND SEMESTER EXAMINATION – FEBRUARY 2014

PHACH 4201 PHARMACEUTICAL CHEMISTRY V – PART II

Answer All Eight Questions.

Date: 24.03.2014

Time: 2 hours

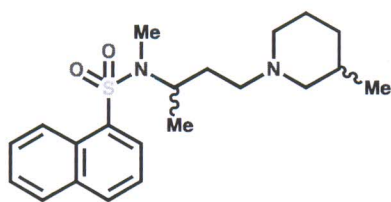
1. 1.1 Describe the biochemical theory of anesthesia. (20 Marks)
- 1.2 Briefly describe the stages of anesthesia. (40 Marks)
- 1.3 Draw the synthetic route of an inhaled and general anesthetic drug. (40 Marks)

2. 2.1 Describe the mode of action of a local anesthetic using a schematic diagram of a sodium channel. (40 Marks)
- 2.2 List factors that influence the local anesthetic activity. (20 Marks)
- 2.3 Illustrate the structural characteristics of a local anesthetic using a diagram. (40 Marks)

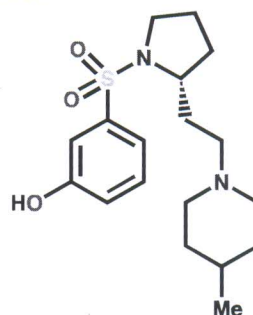
3. 3.1 Draw the schematic diagram of Parietal cell and explain how gastric release can be inhibited. (40 Marks)
- 3.2 Draw the structure of histamine and identify its chemical properties. (40 Marks)
- 3.3 Provide two examples of classical antihistamine and draw its structure. (20 Marks)

4. 4.1 Provide two examples for proton pump inhibitors (PPIs) and draw its structure. (30 Marks)
- 4.2 Draw the mechanism of inhibition of PPIs. (70 Marks)

5. 5.1 Use a diagram to illustrate the mechanism of tricyclic antidepressant. (20 Marks)
- 5.2 The structure A shows a lead compound for the 5HT₇ receptor. Explain how this compound transferred into structure B during drug design process. (80 Marks)



Structure A



Structure B

6. 6.1 Draw the pharmacophore of morphine. (20 Marks)
6.2 Draw the structure of the morphine and discuss the structure activity relationship (SAR). (80 Marks)
7. 7.1 What is inflammation? (20 Marks)
7.2 Describe the pathogenesis of rheumatoid arthritis. (40 Marks)
7.3 Draw the general structure of arylalkanoic acids and discuss the SAR. (40 Marks)
8. 8.1 Classify the epileptic seizures. (20 Marks)
8.2 Describe the anti-epileptic drug mechanism that target ion-channels. (40 Marks)
8.3 Draw the structure of anticonvulsant drugs that contain uride structure. (40 Marks)