UNIVERSITY OF JAFFNA, SRI LANKA

FACULTY OF ALLIED HEALTH SCIENCES

THIRD YEAR SECOND SEMESTER EXAMINATION IN BPharmHons-2021

PHAMC 3253 MEDICINAL CHEMISTRY II

Date: 05 OCT 2023 Time: 02 hours

ANSWER ALL FOUR QUESTIONS

1. 1.1 Draw the structure of morphine. (10 Marks)

   1.2 Describe the Structure Activity Relationship (SAR) of morphine analogues. (40 Marks)

   1.3 Name the different types of opioid receptors. (15 Marks)

   1.4 Explain the binding of *N*-phenethylmorphine at the opioid receptor binding site. (35 Marks)

2. 2.1 Name one (01) oral hypoglycemic agent which has a low risk of hypoglycemia. (10 Marks)

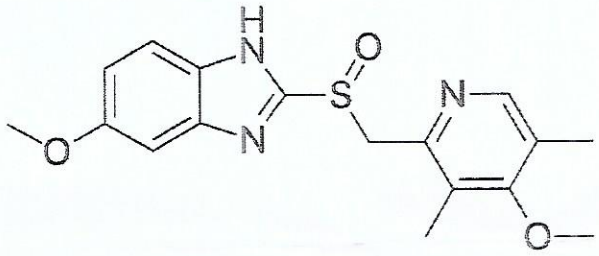
   2.2 Briefly describe the mechanism of action of sulphonyl urea type oral hypoglycaemic agents. (20 Marks)

   2.3 List the chemical classes of thioamides with an example for each. (30 Marks)

   2.4 Describe the Structure Activity Relationship (SAR) of thyroxine. (40 Marks)

3. 3.1 List three (03) reasons for the selective action of proton pump inhibitors. (15 Marks)

   3.2 Explain the reason for the presence of methoxy substituent at the para position of pyridine moiety for the activity of omeprazole. (The structure of omeprazole is given below) (25 Marks)



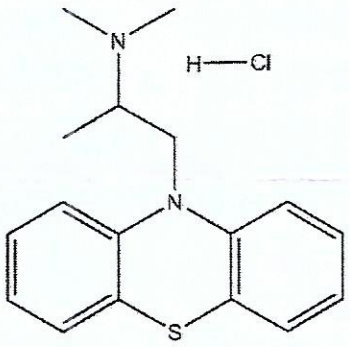
   3.3 Briefly explain the binding interaction for the favoured conformations of cimetidine with H_2 receptor. (25 Marks)

   3.4 Describe the Structure Activity Relationship (SAR) of ranitidine. (35 Marks)

4. 4.1 Name one (01) local anaesthetic which lacks a hydrophilic region in its structure. (10 Marks)

   4.2 Briefly explain the important structural features of the lipophilic region of local anaesthetics for their activity. (35 Marks)

4.3 Identify the structural features responsible for H_1-receptor antagonistic activity of promethazine hydrochloride which is given below.



(15 Marks)

4.4 Describe the Structure Activity Relationship (SAR) of barbiturates for hypnotic activity. **(40 Marks)**