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**UNIVERSITY OF JAFFNA, SRI LANKA**  
**FACULTY OF ALLIED HEALTH SCIENCES**  
**THIRD YEAR SECOND SEMESTER EXAMINATION IN BPharmHons - 2021**  
**PHAMC 3214 MEDICINAL CHEMISTRY II - PAPER II**

Date: 05 OCT 2023

Time: 2 Hours

**ANSWER ALL SIX QUESTIONS.**

1. 1.1 1.1.1 Name and draw the structure of the lead compound of cimetidine development. (10 marks)  
1.1.2 Explain how histamine and  $N^{\alpha}$ - guanylhistamine act as pure agonist and partial agonist respectively. (50 marks)
- 1.2 Briefly explain the reasons for the increased selectivity of proton pump inhibitors. (40 marks)
2. 2.1 Name the different types of opioid receptors. (15 marks)  
2.2 Compare the characters of the different types of opioid receptors mentioned in 2.1. (45 marks)  
2.3 Explain the binding of *N*-phenethylmorphine at the opioid receptor binding site. (40 marks)
3. 3.1 Name three (03) heparin antagonists. (15 marks)  
3.2 3.2.1 Draw the structure of warfarin. (15 marks)  
3.2.2 Briefly explain the mechanism of action of warfarin. (30 marks)  
3.3 Explain the Structure Activity Relationship (SAR) of coumarin derivatives type of anticoagulants. (40 marks)
4. 4.1 4.1.1 List the ideal requirements of general anaesthetics. (20 marks)  
4.1.2 State the advantages and disadvantages of ether type of inhaled general anaesthetics. (20 marks)  
4.2 Describe the SAR of benzoic acid derivatives type of local anaesthetics. (60 marks)
5. 5.1 Name two (02) oral hypoglycemic agents which cause low risk of hypoglycemia. (20 Marks)  
5.2 Explain the mechanism of action of the following types of oral hypoglycemic agents.  
5.2.1 Sulphonyl ureas (50 Marks)  
5.2.2 Thiazolidinediones (30 Marks)
6. 6.1 6.1.1 State the structural requirements of anti-epileptic drugs. (15 marks)  
6.1.2 Name a carbamazepine derivative anti-epileptic drug. (10 marks)  
6.1.3 Write the advantages of the drug mentioned in 6.1.2 over carbamazepine. (30 marks)  
6.2 Name a drug which causes depression by lowering the monoamine level in the body. (10 marks)  
6.3 Explain the mechanism of action of carbidopa. (35 marks)