

UNIVERSITY OF JAFFNA, SRI LANKA
BACHELOR OF PHARMACY
THIRD YEAR SECOND SEMESTER EXAMINATION –APRIL 2020
PHAMC 3214 MEDICINAL CHEMISTRY II
PAPER II

Date: 21. 09. 2020



Time: 2 Hours

Answer all 6 questions.

1. 1.1 Name and draw the structure of the lead compound of cimetidine development. (10 marks)
- 1.2 Describe how histamine and N^{α} -guanylhistamine act as pure agonist and partial agonist respectively. (40 marks)
- 1.3 Explain the Structure Activity Relationship (SAR) of ranitidine. (50 marks)
2. 2.1 Briefly explain the reasons for the increased selectivity of proton pump inhibitors. (30 marks)
- 2.2 Explain the design and development of omeprazole. (70 marks)
3. 3.1 Compare the characters of μ , κ and δ opioid receptors. (45 marks)
- 3.2 Name and draw the basic structures of three (03) main drug classes that can be developed through simplification of morphine. (55 marks)
4. 4.1 List the ideal requirements of general anaesthetics. (20 marks)
- 4.2 Name two (02) novel ether type general anaesthetics and draw their structures. (20 marks)
- 4.3 Describe the SAR of benzoic acid derivatives type local anaesthetics. (60 marks)
5. 5.1 Name an oral hypoglycemic agent which has a low risk of hypoglycemia. (10 marks)
- 5.2 Describe the mechanism of action of sulphonyl ureas and biguanides type oral hypoglycemic agents. (30 marks)
- 5.3 Describe the effects of substitutions on the glucocorticoid and mineralocorticoid activities in orally active cortisol analogues with the help of structures. (60 marks)
6. 6.1
6.1.1 State the structural requirements of anti-epileptic drugs. (15 marks)
- 6.1.2 Name and draw the structure of a carbamazepine derivative drug. (15 marks)
- 6.1.3 Write the advantages of the drug mentioned in 6.1.2 over carbamazepine. (20 marks)
- 6.2 Name a drug which causes depression by lowering the monoamine level in body. (10 marks)
- 6.3 Describe the mechanism of action of carbidopa. (40 marks)