UNIVERSITY OF JAFFNA
BACHELOR OF PHARMACY
THIRD YEAR FIRST SEMESTER EXAMINATION
PHAMC 3114 MEDICINAL CHEMISTRY 1 - PAPER II

Date: 21.09.2018 **Time: 2 Hours**

Answer All Six questions.

1. 1.1 Draw a schematic diagram to describe the cholinergic neurotransmission. (40 Marks)
   1.2 Explain with chemical structures for acetylcholine molecule having short-half life. (20 Marks)
   1.3 Compare the structure-activity relationship of cholinergic agonist and antagonist. (40 Marks)

2. 2.1 Name the subunits of G protein. (20 Marks)
   2.2 Diagrammatically explain the signal transduction pathway of G_q protein. (65 Marks)
   2.3 Name three chemical molecules that influence the cAMP production. (15 Marks)

3. 3.1 Draw the structure of sulphonamide. (10 Marks)
   3.2 Briefly describe the antibacterial mechanism of sulphonamides. (40 Marks)
   3.3 Describe the structure-activity relationship of the sulphonamide. (50 Marks)

4. 4.1 Describe the mechanism of action of alkylating agents used in the cancer therapy. (20 Marks)
   4.2 Describe the formation of interstrand crosslinking using chlormethine as a drug. (40 Marks)
   4.3 Describe the mechanism of action of cisplatin with relevant chemical structures. (40 Marks)

5. 5.1 Name two analogues of physostigmine. (10 Marks)
   5.2 Describe the structure-activity relationship of physostigmine. (40 Marks)
   5.3 Illustrate the mechanism of action of physostigmine. (50 Marks)

6. 6.1 Draw the general structure of catecholamine. (20 Marks)
   6.2 Draw the structure of salbutamol and indicate which group is responsible for the β_2 activity. (30 Marks)
   6.3 Describe the development of propranolol from isoprenaline as the lead compound. (50 Marks)

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