

UNIVERSITY OF JAFFNA, SRI LANKA
BACHELOR OF PHARMACY
 Third
FOURTH YEAR FIRST SEMESTER EXAMINATION – JULY 2013

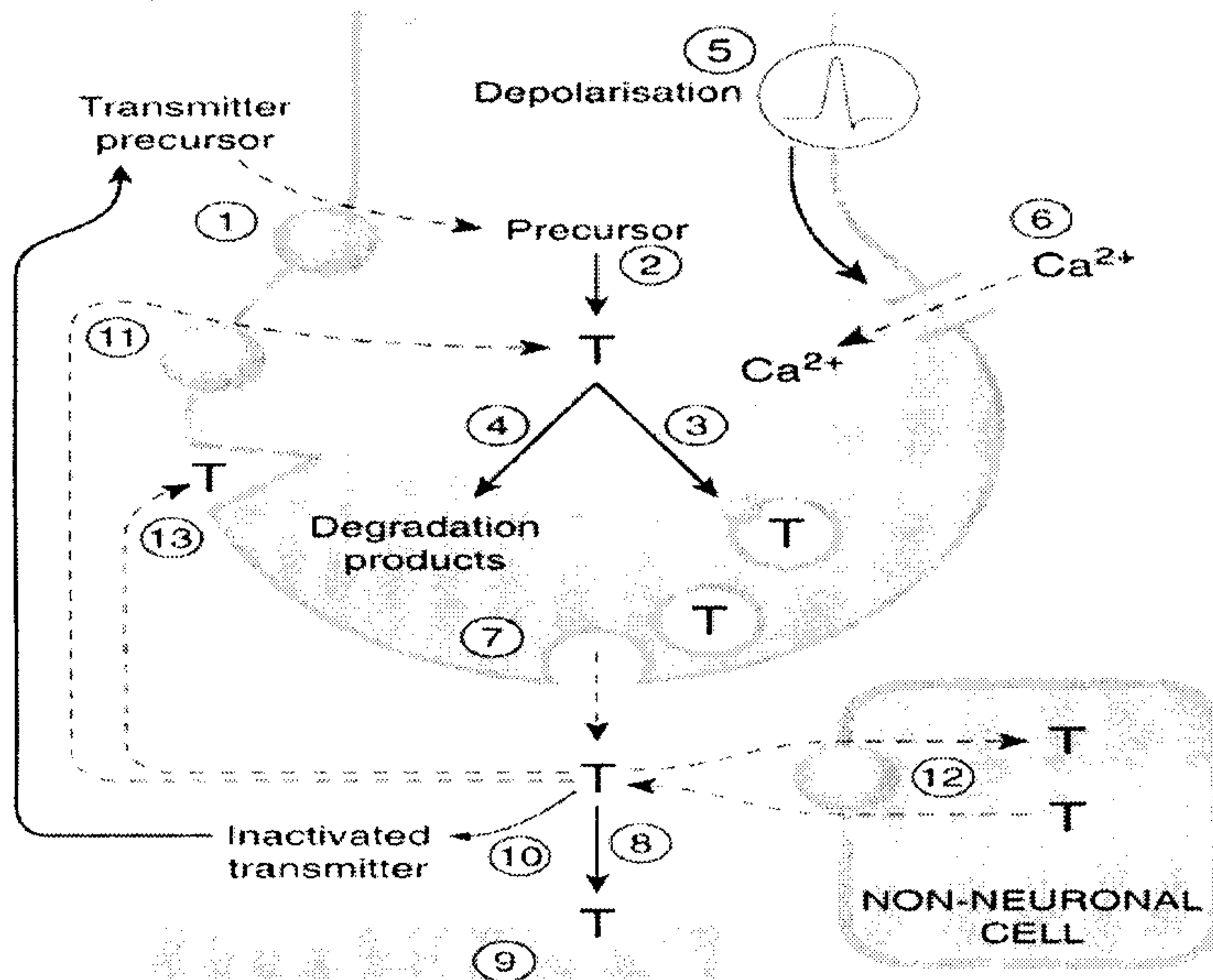
PHAMC 3101 MEDICINAL CHEMISTRY I
PAPER II

Date: 12.08.2013

Time: 2 Hours

ANSWER ALL EIGHT QUESTIONS.

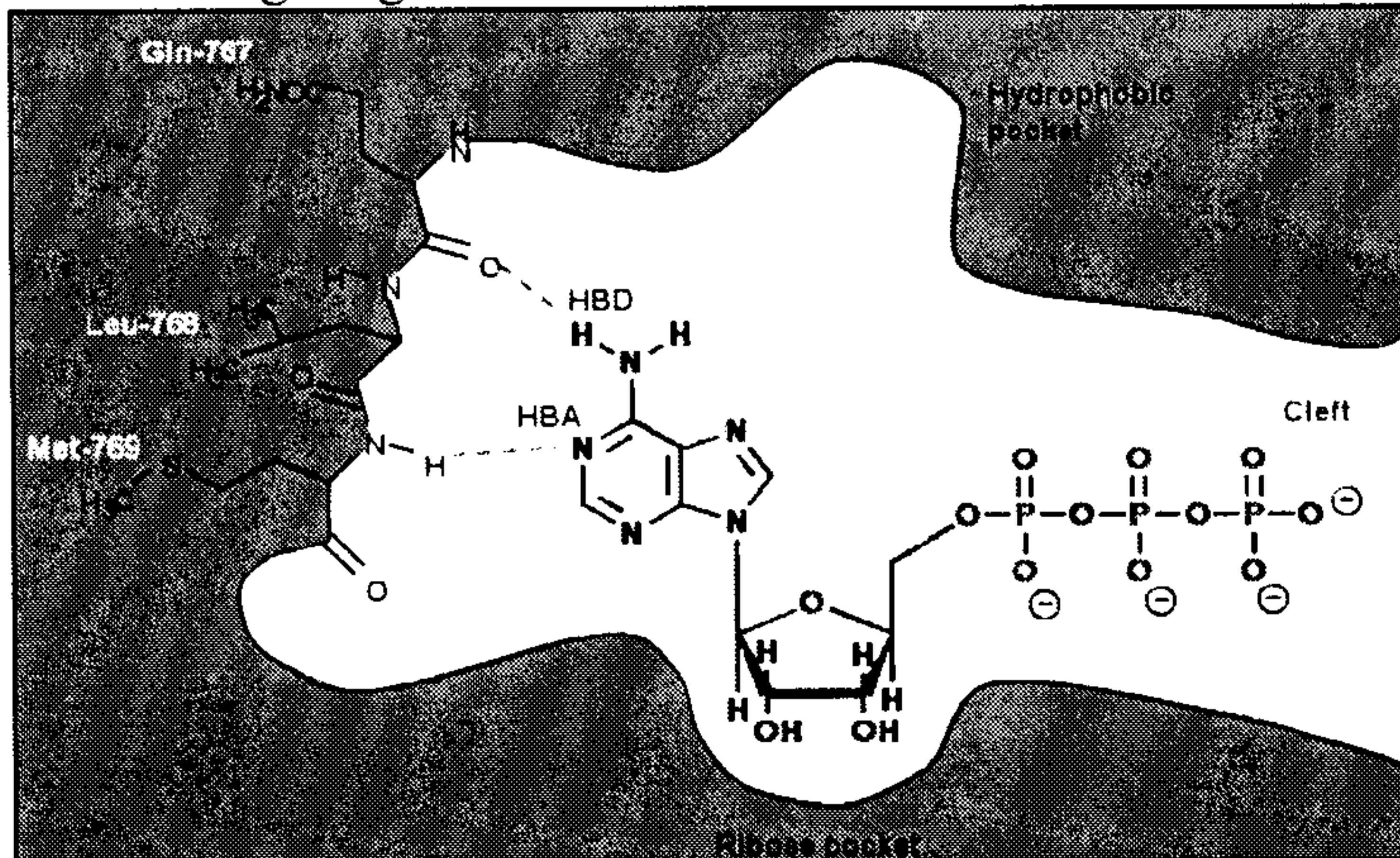
- 1 1.1 The following diagram describes the nerve transmission process. Name the steps marked 1 to 13. (50 marks)



- 1.2 Describe the Structure Activity Relationship (SAR) of the acetyl choline. (50 marks)
- 2 2.1 List five consequences of genetic defects in the context of cancer. (20 marks)
- 2.2 Write short notes on extrinsic apoptosis pathway with the help of a diagram. (80 marks)
- 3 3.1 What are the differences between type I and type II protein kinase inhibitors? (20 marks)
- 3.2 Give an example for type I and type II protein kinase inhibitors. (10 marks)
- 3.3 Describe the binding interactions of Imatinib with protein kinase. (70 marks)
- 4 4.1 Draw the structure of sulphonamides. (10 marks)
- 4.2 Briefly describe the antibacterial mechanism of sulfonamides. (40 marks)
- 4.3 Describe the structure activity relationship of the sulfonamides. (50 marks)
- 5 5.1 Draw the general structure of the catecholamine. (10 marks)
- 5.2 Draw the biosynthesis of adrenaline using its chemical structure from L-tyrosine. (50 marks)
- 5.3 5.3.1 How Salmeterol differs from Salbutamol? (20 marks)
- 5.3.2 What are the advantages of Salmeterol over Salbutamol? (20 marks)

- 6 6.1 Provide two natural sources to obtain cardiac glycosides. (10 marks)
 6.2 Describe the mechanism of action of cardiac glycosides. (40 marks)
 6.3 Describe the structure activity relationship of the cardiac glycosides. (50 marks)

- 7 7.1 Describe the ATP binding interactions of the protein kinase receptor of the help of following diagram. (70 marks)



- 7.2 Sorafenib is a multi-tyrosine receptor kinase inhibitor. Describe its binding interactions. (30marks)

- 8 8.1 Use a schematic diagram to illustrate the signal transduction mechanism of G_s protein. (40 marks)
 8.2 What kind of drug is Physostigmine? (10 marks)
 8.3 Describe diagrammatically how Physostigmine acts on acetylcholine esterase. (50 marks)