



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES
DEPARTMENT OF PURE & APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR:

BTMB

ABT4410: BIOCHEMICAL PHARMACOLOGY

END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

TIME: 2 HOURS

DATE: 10 Mar 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of 5 questions. Attempt question ONE compulsory and any other two questions.

Do not write on the question paper.

Question ONE

- a. Define the following terms
- | | |
|---|---------|
| i) Antagonist | (1mark) |
| ii) Receptor | (1mark) |
| iii) Biochemical pharmacology | (1mark) |
| iv) Pharmacodynamic | (1mark) |
| v) Equilibrium dissociation constant (Kd) | (1mark) |
- b. Explain the major factors influencing drugs reaching their targets (3 marks)
- c. Explain why some interactions preferable to others in terms of drug design (4 marks)
- d. Distinguish the following terms

- i) Pharmacodynamic vs Pharmacokinetics (2marks)
- ii) Agonist and Antagonist (2marks)

- e. Several factors influence the duration of a drug's effect on a target. Name two factors influencing short time-course effects and one factor long time-course effects. (4 marks)

- f. Give the chemical structures of the following drugs below
 - i) Acetazolamide (2marks)
 - ii) Acetaminophen (2marks)

- g. Explain the major factors influencing drugs reaching their targets (3marks)

- h. Explain the mechanism and kinetics of drug receptor interactions (6marks)

Question TWO

- a. Describe how corticosteroid crosses the plasma membrane and interact with intracellular receptors to give a therapeutic effect (10 marks)

- b. Describe typical pathways for elimination of hydrophilic and hydrophobic drugs (10 marks)

Question THREE

Discuss transmembrane signaling mechanisms of cytokine and Tyrosine kinase drug receptors (20 marks)

Question FOUR

- i) Explain the mechanism and kinetics of drug receptor interactions (6marks)

- ii) Describe how Angiotensin degradation cause increased blood pressure(14 marks)

Question FIVE

- i) How does the drug Remikren and enalaprilate reduce blood pressure.(10mrks)

- ii) Discuss the distribution and kinetics of Thiopental drug concentrations in different body parts (10mrks)