



UNIVERSITY OF SWAZILAND

Faculty of Health Sciences

Department of Environmental Health Sciences

Supplementary Examination 2009

TITLE OF PAPER : INTRODUCTION TO MICROBIOLOGY
AND IMMUNOLOGY

COURSE CODE : HSC 105

DURATION : 3 HOURS

MARKS : 100

INSTRUCTIONS : READ THE QUESTIONS & INSTRUCTIONS
CAREFULLY.

ANSWER ANY FOUR QUESTIONS.

EACH QUESTION CARRIES 25 MARKS.

NO PAPER SHOULD BE BROUGHT INTO NOR OUT
OF THE EXAMINATION ROOM.

BEGIN EACH QUESTION ON A SEPARATE SHEET
OF PAPER.

**DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED
BY THE INVIGILATOR.**

QUESTION 1

- a) Use your comprehensive knowledge of virology to explain the relevance of viruses to humans. (13 marks)
- b) Write an essay on "Influenza: crossing the species barrier". (12 marks)

[TOTAL MARKS = 25]

QUESTION 2

Write an essay on B and T cells of the immune system.

[TOTAL MARKS = 25]

QUESTION 3

- a) What are the possible causes of cancer? (5 marks)
- b) Cancer is a growth disorder of cells. Discuss. (20 marks)

[TOTAL MARKS = 25]

QUESTION 4

- a) What are penicillinases? What is their mode of action? (4 mark)
- b) Name some examples of penicillins and tetracyclines. (5 marks)
- c) Explain the mode of action of antibiotics. (10 marks)
- d) How does antibiotic resistance in bacteria arise? Elaborate. (6 marks)

[TOTAL MARKS = 25]

QUESTION 5

- a) Why are antibodies called immunoglobulins? (3 marks)
- b) Name the classes of antibodies. (4 marks)
- c) What is anamnestic response? Elaborate. (4 marks)
- d) Explain the concept of antibody biosynthesis. (6 marks)
- e) Outline the characteristics of specific immune response. (4 marks)
- f) Under what circumstances is immunotherapy effected? (4 marks)

[TOTAL MARKS = 25]

QUESTION 6

- a) What is serology? (3 marks)
- b) Explain the events that take place during an anaphylactic type 1 hypersensitive response in humans. (8 marks)
- c) Explain the different types of antigens. (7 marks)
- d) Explain the effect of HIV on the immune system. (7 marks)

[TOTAL MARKS = 25]