

UNIVERSITY OF ESWATINI
MAIN EXAMINATION PAPER: OCTOBER 2021

TITLE OF PAPER: VIROLOGY

COURSE CODE: BIO462

TIME ALLOWED: THREE HOURS

INSTRUCTIONS:

1. ANSWER ANY FOUR QUESTIONS
2. EACH QUESTION CARRIES TWENTY FIVE (25) MARKS
3. ILLUSTRATE YOUR ANSWERS WITH LARGE AND
CLEARLY LABELLED DIAGRAMS WHERE APPROPRIATE

SPECIAL REQUIREMENTS: NONE

THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY
THE INVIGILATORS.

[PLEASE TURN OVER]

Question 1

- a) Briefly explain the concept of virus synthesis (10 marks)
 - b) Genome replication requires the use of templates and enzymes. Elaborate on this statement. (15 marks)
- [Total marks=25]

Question 2

- a) What is an infectious unit of a virus? Elaborate (5 marks)
 - b) Explain the range of virus-host cell interactions (20 marks)
- [Total marks=25]

Question 3

- a) What are free, stable, RNA molecules? (7 marks)
 - b) Write an essay on multicomponent plant viruses (18 marks)
- [Total marks=25]

Question 4

Choose any two groups of viruses and then compare and contrast their replication with those viruses that employ reverse transcriptase. (25 marks)

Question 5

Explain the following modes of viral transmission:

- a) Mechanical transmission (5 marks)
 - b) Insect transmission (10 marks)
 - c) Fungal transmission (5 marks)
 - d) Vegetative plant parts transmission (5 marks)
- [Total marks=25]

Question 6

- a) What is transfection technique?
- b) Explain the molecular basis of cancer.

(5 marks)

(20 marks)

[Total marks=25]

END OF EXAMINATION PAPER