



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

P.O. Box 972-60200 – Meru-Kenya

Tel: +254(0) 799 529 958, +254(0) 799 529 959, + 254 (0) 712 524 293,

Website: info@must.ac.ke Email: info@must.ac.ke

University Examinations 2023/2024

FOURTH YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN BIOTECHNOLOGY

SBT 3459: VIROLOGY

DATE: APRIL 2024

TIME: 2 HOURS

INSTRUCTIONS: Answer question *one* and any other *two* questions

QUESTION ONE (30 MARKS)

- a) Define a virus and explain the difference from other microorganisms (2 marks)
- b) Briefly describe three theories related to the origin of viruses and the problems associated with each (8 marks)
- c) Define the following terms. Virion, capsid, capsomere, nucleocapsid (4 marks)
- d) Describe any three types of viral capsid symmetry (3 marks)
- e) Describe the major factor that determines the susceptibility of a cell to viral infection (2 marks)
- f) Explain the mechanisms of virus entry and release from a host cell (3 marks)
- g) Differentiate between productive and abortive infections (5 marks)
- h) State the difference between positive sense and negative sense strand in ssRNA viral genomes (3 marks)

QUESTION TWO (20 MARKS)

Discuss viruses with small, double stranded DNA genomes

QUESTION THREE (20 MARKS)

Illustrate with a diagram the virus replication cycle

QUESTION FOUR (20 MARKS)

Discuss RNAi and its role in control of plant viruses