



MACHAKOS UNIVERSITY

University Examinations 2019/2020 academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

FOURTH YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN BIOLOGY

BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION

SBT 422: VIROLOGY

DATE: 21/1/2021

TIME: 2.00-4.00 PM

INSTRUCTIONS

1. Answer Question one (compulsory) and **any two** questions in Section B.
2. Use clean well labelled diagrams wherever appropriate.

QUESTION ONE (30 MARKS)

- a) Describe the structural components of a typical animal virus. (3 marks)
- b) List the **three** groups of Herpes viruses. (3 marks)
- c) Explain the main enzymatic targets of HIV drugs. (3 marks)
- d) Viruses are both cellular and acellular organisms. Justify. (3 marks)
- e) Explain the transmission mode of HIV virus. (3 marks)
- f) Explain **one** consequence of viral interaction with the immune system. (3 marks)
- g) Explain **three** primary purpose of virus cultivation. (3 marks)
- h) Highlight **three** advantages of viral cultivation in embryonated egg. (3 marks)
- i) Describe the replication of an DNA enveloped virus. (3 marks)
- j) Explain **one** basic mode of entry of an enveloped animal virus into a host. (3 marks)

QUESTION TWO (20 MARKS)

- a) Differentiate between acute and persistent viral infections. (4 marks)
- b) Discuss the control measures for viral infections and diseases. (16 marks)

QUESTION THREE (20 MARKS)

Describe in detail the replication cycle of HIV virus.

QUESTION FOUR (20 MARKS)

Discuss viral classification based on Baltimore System of classification.

QUESTION FIVE (20 MARKS)

- a) Explain **four** mechanisms of viral evasion and subversion of the host immune system. (12 marks)
- b) Describe the process for cultivation of virus in embryonated egg. (8 marks)