



# 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

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## 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)