



MACHAKOS UNIVERSITY

University Examinations 2017/2018

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

FOURTH YEAR SECOND SEMESTER EXAMINATION FOR BACHELOR OF SCIENCE

IN BIOLOGY

SBT 422: VIROLOGY

DATE: 20/12/2017

TIME: 2.00-4.00 PM

INSTRUCTIONS

Answer Question one (**compulsory**) and **any two** questions.

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 this statement. (3 marks)
- e) Explain the transmission mode of Cassava Mosaic (CMV) 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 Tobacco Mosaic Virus (TMV) on a tomato leaf. (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. (20 marks)

QUESTION FOUR (20 MARKS)

Discuss viral classification based on Baltimore System of classification. (20 marks)

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)