



# UNIVERSITY OF EMBU

2016/2017 ACADEMIC YEAR

FIRST SEMESTER EXAMINATION

FOURTH YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE  
IN AGRICULTURE (CROP PROTECTION OPTION)

ACP 405: PLANT NEMATODOLOGY AND VIROLOGY

**DATE: DECEMBER 7, 2016**

**TIME: 11:00AM-1:00PM**

**INSTRUCTIONS:**

**Answer Question ONE and ANY Other TWO Questions**

**QUESTION ONE (30 MARKS)**

a). Define the following terms

- |                          |          |
|--------------------------|----------|
| i) Viroids               | (1 mark) |
| ii) Helper virus         | (1 mark) |
| iii) Susceptible variety | (1 mark) |
| iv) Virus acquisition    | (1 mark) |

b). Differentiate between

- |                                     |           |
|-------------------------------------|-----------|
| i) Syndrome and propagative viruses | (2 marks) |
| ii) Chlorosis and ring spot         | (2 marks) |
| iii) Amphimixis and ecdysis         | (2 marks) |

c). Write short notes on the following

- |   |           |
|---|-----------|
| i) Limitations of using mild strain as a means of plant protection          | (3 marks) |
| ii) i Reasons why nematodes were ignored earlier by farmers and researchers | (3 marks) |

- iii) Functions of the virus capsid (4 marks)
- iv) Predaceous nematodes (4 marks)
- d). Suppose you are a lecturer at University of Embu and have received students from Chuka boys who want to learn about the differences between plant parasitic nematodes and Entomopathogenic nematode. Outline your points (6 marks)

**QUESTION TWO (20 MARKS)**

- a). Suppose you are the research technologist employed by Farm Concern organization and have received visitors who want to learn about factors influencing nematode population and distribution. Discuss your notes. (10 marks)
- b). Discuss nematode survival mechanisms in the ecosystem (10 marks)

**QUESTION THREE (20 MARKS)**

Suppose you are employed by Ministry of Agriculture and have received an invitation to train farmers on virus disease control in plants. Select a virus disease of your choice and discuss the etiology, symptoms, spread and management of the viral disease

**QUESTION FOUR (20 MARKS)**

- a). Outline the characteristics of the *Meloidogyne* spp (5 marks)
- b). Discuss the above and below ground symptoms caused by plant parasitic nematodes (15 marks)

**QUESTION FIVE (20 MARKS)**

- a). Outline any five situations where a virus may be present in the plant but the symptoms are not expressed by the host plant (5 marks)
- b). Discuss insect vector-plant pathogens interactions (15 marks)

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