



# MACHAKOS UNIVERSITY

University Examinations for 2016/2017

SCHOOL OF AGRICULTURE AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION

BACHELOR OF EDUCATION (SCIENCE)

**KST 302 PRINCIPLES OF PLANT PATHOLOGY  
THEORY**

**DATE: 1/8/2017**

**TIME: 11:00 – 1:00 PM**

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## INSTRUCTIONS

1. This paper has sections A and B.
2. Section A has one question and is compulsory. Answer all questions in this section (totaling to 30 marks)
3. Answer any two questions in section B (totaling to 20 marks each)

## SECTION A (COMPULSORY)

### QUESTION ONE (30 MARKS)

- a) Explain the following terminologies used in plant pathology:
- i) Epidemiology (2 marks)
  - ii) Etiology (2 marks)
  - iii) Necrosis (2 marks)
  - iv) Mosaic (2 marks)
  - v) Quarantine (2 marks)
- b) List four biotic factors that cause diseases in plants. (4 marks)

- c) Explain three means of transmission of viral diseases. (3 marks)
- d) Explain 3 ways in which pathogens survive from one season to another. (3 marks)
- e) Identify two insect vectors that transmit the maize lethal necrosis disease and state four symptoms of the disease. (6 marks)
- f) Integrated Pest Management contributes to environmental safety. Explain four reasons that justify this statement. (4 marks)

## **SECTION B: ANSWER ANY OTHER TWO QUESTIONS**

### **QUESTION TWO (20 MARKS)**

- a) Describe five major steps in the infection process of crown gall disease in roses and five symptoms observed in infected plants. (10 marks)
- b) Explain five dissemination pathways of the potato cyst nematode. (10 marks)

### **QUESTION THREE (20 MARKS)**

- a) Illustrate the disease tetrahedron using a diagram and explain four factors that influence it. (8 marks)
- b) Explain six factors that affect disease epidemics in plants. (12 marks)

### **QUESTION FOUR (20 MARKS)**

- a) Describe five symptoms of banana bacterial wilt disease. (10 marks)
- b) Explain five management strategies for the control of soil borne pathogens. (10 marks)

### **QUESTION FIVE (20 MARKS)**

- a) Describe symptoms of four abiotic diseases affecting plants. (8 marks)
- b) Explain three factors that lead to damping off disease of seedlings in nurseries and name three pathogens that cause the disease. (12 marks)