# MACHAKOS UNIVERSITY COLLEGE

**(A Constituent College of Kenyatta University)**

**University Examinations 2015/2016**

**SCHOOL OF AGRICULTURE AND NATURAL RESOURCES MANAGEMENT**

**DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION**

**FIRST SEMESTER EXAMINATION FOR DEGREE IN BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION**

**KST 302: PRINCIPLES OF PLANT PATHOLOGY THEORY**

**DATE:** **TIME:**

**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 (30 MARKS) (COMPULSORY)**

**QUESTION ONE**

a) Explain the following terminologies with respect to plants:

i) Disease cycle (2 marks)

ii) Inoculum (2 marks)

iii) Symptoms (2 marks)

iv) Pathogen (2 marks)

v) Virulence (2 marks)

vi) Susceptibility (2 marks)

b) Explain three physiological functions that are interfered with when a plant is affected by a disease. (3 marks)

c) Describe one parasitic weed species affecting maize in Kenya and give five reasons why its management is a major challenge. (6 marks)

d) A tomato crop was having wilting and chlorosis symptoms. State three possible pathogens that could be responsible for these symptoms in tomato indicating their common names and scientific names. (6 marks)

e) Explain three reasons why Integrated Pest Management is important. (3 marks)

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

**QUESTION TWO**

a) Discuss the maize lethal necrosis disease with respect to the causal agents, symptoms of the disease and insect vectors involved in transmission (10 marks)

b) Explain any 5 strategies that are used to control virus diseases affecting plants. (10 marks)

**QUESTION THREE**

a) Explain seven factors that affect development of disease epidemics. (14 marks)

b) Describe one plant pathogen that has caused a disease epidemic in the history of plant pathology and indicate the crop affected and five management strategies for this disease. (6 marks)

**QUESTION FOUR**

a) Illustrate the life cycle of the root knot nematode and explain the invasion of roots and feeding of the females within the root system. (10 marks)

b) Explain five symptoms caused by the root knot nematode and five management strategies that are used in their control. (10 marks)

**QUESTION FIVE**

a) Differentiate banana bacterial wilt disease from Panama disease of bananas with respect to causal agents and symptoms caused by each pathogen. (10 marks)

b) Discuss five ways in which banana bacterial wilt is managed. (10 marks)