UNIVERSITY OF EMBU

2016/2017 ACADEMIC YEAR

SECOND SEMESTER EXAMINATION

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

ACP 408: CROP DISEASES AND THEIR MANAGEMENT

DATE: APRIL 5, 2017 **TIME:11:00AM-1:00PM**

INSTRUCTIONS:

Answer Question ONE and ANY other TWO Questions

QUESTION ONE

a) Distinguish mollicutes from bacteria. (1 Mark)

b) Give reasons why crop losses due to diseases are often higher in developing countries than developed countries. (2 Marks)

c) Explain four methods that are used to exclude plant pathogens from the farm. (2 Marks)

d) Advice the Ministry of Agriculture, Livestock and Fisheries on the use of the global positioning system as a tool in plant disease epidemiology. (2 Marks)

e) Outline two points on how biotechnology can be used as a tool in an integrated disease management program. (2 Marks)

f) Outline the symptoms that are observed on the roots that are attacked by nematodes. (3 Marks)

g) In relation to management of plant diseases, outline three reasons why small-holder farmers in Kenya should be encouraged to use certified seed. (3 Marks)

h) Explain five factors that determine the choice of disease control methods (5 Marks)

i) Using the table below, compute the area under disease progress curve. (5 Marks)

Days after sowing	20	40	60	80	100
Disease severity %	5	15	30	40	45

j) A fourth year student working on his special project realized that the plant pathogenic fungi he had cultured in Petri dishes were not sporulating. Explain five factors that could be affecting his research. (5 Marks)

QUESTION TWO

Discuss the sweet potato virus under the following topics:

a) General symptoms caused on plants. (2 Marks)

b) Management of the disease. (8 Marks)

c) The potential use of RNA silencing-based approaches for engineering resistance in plants. (10 Marks)

QUESTION THREE

a) Explain five methods used to diagnose plant pathogenic fungi. (10 Marks)

b) Describe five ways of sterilization of apparatus in a plant pathology lab. (10 Marks)

QUESTION FOUR

a) A researcher wants to investigate the diversity of *Pseudocercospora griseola* from various localities in Kenya. Explain the procedure he will use to characterize the samples into physiological races using a set of twelve differential cultivars. (12 Marks)

b) Write short notes on management of coffee berry disease. (8 Marks)

QUESTION FIVE

a) Banana bacterial wilt is ravaging the crop in different parts of the country especially in western Kenya. In relation to the disease, prepare short notes covering the following sub-topics:

i. Disease symptoms. (2 Marks)

ii. Mode of transmission . (3 Marks)

iii. Disease management. (5 Marks)

b) Explain how modern agriculture increased the problems of maize diseases in Kenya. (10 Marks)

END