



EMBU UNIVERSITY COLLEGE

(A Constituent College of the University of Nairobi)

2015/2016 ACADEMIC YEAR

SECOND SEMESTER EXAMINATION

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

ACP 408: CROP DISEASES AND THEIR MANAGEMENT

DATE: APRIL 5, 2016

TIME: 08:30-10:30

INSTRUCTIONS:

Answer Question ONE and ANY Other TWO Questions

QUESTION ONE

- a) Define the term economic threshold in relation to plant disease management. (1 Mark)
- b) In the realization of Kenya Vision 2030, why should the government invest on management of the maize lethal necrosis disease? (5 Marks)
- c) Discuss the contribution of human beings to plant disease epidemics. (4 Marks)
- d) Explain why investors should support research that deals with developing disease models. (5 Marks)
- e) State the reason why it is difficult to culture *Uromyces appendiculatus* in media. (1 Mark)
- f) Highlight two advantages of using chemicals to control plant diseases. (2 Mark)
- g) Briefly explain the goals of an integrated disease control program. (4 Marks)

- h) Explain the management strategies that can be employed to reduce aflatoxins levels in peanuts in Homabay County, Kenya . (3 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

QUESTION TWO

- a) You have been requested to characterize a prevalent disease in Kenya using PCR technique. Write the procedure you will take to achieve this objective. (10 Marks)
- b) As an IPM manager, explain how modern biotechnology can be incorporated in integrated disease management programs. (10 Marks)

QUESTION THREE

Discuss septoria leaf spot of tomato under the following topics:

- i) Causal agent. (1 Mark)
- ii) Symptoms. (5 Marks)
- iii) Disease development. (5 Marks)
- iv) Disease management. (9 Marks)

QUESTION FOUR

- a) Explain five cultural practices that are used to manage nematodes in the field. (10 Marks)
- b) Discuss how the following technologies can be used as tools in plant disease epidemiology
- i) Geographic information system. (2 Marks)
 - ii) Global positioning system. (2 Marks)
 - iii) Geostatistics. (2 Marks)
 - iv) Remote sensing. (2 Marks)
 - v) Information technology. (2 Marks)

QUESTION FIVE

- a) Resistance breeding is regarded as an economic, durable and environmentally friendly strategy of managing plant diseases. In this context, write short notes on true resistance as a method of managing plant diseases. (6 Marks)
- b) State the gene-for-gene concept and explain its application in resistance breeding. (4 Marks)
- c) Write short notes on biological control of plant diseases. (10 Marks)

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