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 (HORTICULTURE)

ACP 402: DIAGNOSTIC STUDIES OF PLANT DISEASES

DATE: APRIL 12, 2016   TIME: 11:00-1:00

INSTRUCTIONS:

Answer Question ONE and ANY Other TWO Questions

QUESTION ONE

a) Explain hypoplasia, hyperplasia and hypertrophy.   (3 Marks)

b) Distinguish local and systemic disease symptoms giving an example in each case.

(3 Marks)

c) Explain classification of plant disease based on the disease cycle.   (3 Marks)

d) Explain why viable plate counts are more sensitive than microscopic counts in the enumeration of phytopathogenic bacteria.   (3 Marks)

e) Identify three main limitations of using symptoms in diagnosis of plant diseases.

(3 Marks)

f) Explain three key factors that determine the severity of symptoms in plant diseases.

(3 Marks)

g) Briefly explain what causes wilting symptoms in plants infected by *Verticillium dahlia.*

(3 Marks)

h) Citing an example in each case distinguish Plesionecrosis and Holonecrosis.   (3 Marks)

i) Distinguish signs and symptoms giving an example of any maize disease.   (3 Marks)

j) A fourth year plant pathology student studying bean anthracnose disease observed the following information. Using the recorded data calculate disease severity. (3 Marks)

Disease Grade	Total rating	No. of ratings
0	3	0
1	4	4
3	8	24
5	4	20
7	9	63
9	3	27

QUESTION TWO

You are provided with diseased material which you suspect to have been infected by a bacterial pathogen. Describe how you can diagnose the disease and identify the causative agent. (20 Marks)

QUESTION THREE

Give a detailed account on methods used to measure disease incidence and severity.

(20 Marks)

QUESTION FOUR

Explain how you can isolate a phytopathogenic fungus from a diseased plant tissue.

(20 Marks)

QUESTION FIVE

Discuss the lifecycle of *Puccinia graminis* f.sp *tritici* and explain why it is a successful plant pathogen. (20 Marks)

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