



1st SEMESTER 2012/2013

PAGE 1 OF 2

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION

**PROGRAMME: BACHELOR OF SCIENCE IN AGRICULTURAL
EDUCATION YEAR 3, BACHELOR OF SCIENCE IN
AGRONOMY YEAR 3, AND BACHELOR OF
HORTICULTURE YEAR 3.**

COURSE CODE: CP 304

TITLE OF PAPER: PLANT PATHOLOGY & DISEASE MANAGEMENT

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED BY
THE CHIEF INVIGILATOR**

QUESTION 1

Distinguish the following:

- a) Downy mildew and powdery mildew (6 marks)
 - b) Early and late leafspot of groundnuts (6 marks)
 - c) A fungal and a bacterial leafspot (6 marks)
 - d) Fungal and bacterial wilt of solanaceous crops (8 marks)
- [25 marks]**

QUESTION 2

Discuss a fungal disease of a major crop in Swaziland under the following topics:

- (i) Name of crop (1 marks)
 - (ii) Name of disease (1 marks)
 - (iii) Causal agent (3 marks)
 - (iv) Epidemiology (3 marks)
 - (v) Symptoms (7 marks)
 - (vi) How the pathogen survives/overwinters (5 marks)
 - (vii) Control/management measures (5 marks)
- [25 marks]**

QUESTION 3

- a. Contrast zygomycetes and ascomycetes (10 Marks)
 - b. Discuss the Disease triangle and the significance of its different components in disease development. (15 Marks)
- [25 marks]**

QUESTION 4

- (a) Outline the differences between biotrophs and necrotrophs. (10 marks)
 - (b) Discuss the different types of viruses based on the transmission by aphids. (15 marks)
- [25 marks]**

QUESTION 5

- (a) From a variety with 3 resistant genes (R_1 , R_5 and R_{11}), work out the possible gene combinations and their reaction to a pathogen with corresponding genes using the gene-for-gene concept. (16 marks)
 - (b) Outline the different types of symptoms caused by viruses (9 marks)
- [25 Marks]**