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1st SEMESTER 2016/2017

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**UNIVERSITY OF SWAZILAND
FINAL EXAMINATION**

PROGRAMMES:

- 1. B.SC IN AGRICULTURAL EDUCATION III**
- 2. B.SC IN AGRONOMY III**
- 3. B.SC IN HORTICULTURE III**

COURSE CODE: CP304

TITLE OF PAPER: PLANT PATHOLOGY & DISEASE MANAGEMENT
TIME ALLOWED: TWO (2) HOURS

- INSTRUCTIONS:**
- 1. ANSWER QUESTION 1 (COMPULSORY) AND ANY OTHER 3 QUESTIONS**
 - 2. ANSWER FOUR (4) QUESTIONS IN TOTAL**
 - 3. EACH QUESTION CARRIES TWENTY FIVE (25) MARKS.**
 - 4. ILLUSTRATE YOUR ANSWERS WITH LARGE AND CLEARLY LABELED DIAGRAMS WHERE APPROPRIATE.**

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QUESTION 1 (COMPULSORY)

(a) Given a leaf showing mildew symptoms, describe how you would
(i) confirm it is downy mildew and not powdery mildew,

(3 marks)

(ii) prepare a slide to view under the microscope,

(10 marks)

(iii) confirm that it is *Plasompara*,

(2 marks)

(b) Draw the fructification.

(10 marks)

[25 marks]**QUESTION 2**

(a) Sequentially list the steps suggested in Koch's postulate.

(8 marks)

(b) List the problems encountered with obligate parasites when following the steps in Koch's postulate.

(2 marks)

(c) Draw the fruiting structures of any three (3) of the following downy mildew and briefly explain their diagnostic features.

(15 marks)

(i) *Albugo*,

(ii) *Basidiophora*,

(iii) *Pythium*,

(iv) *Phytophthora*.

[25 marks]**QUESTION 3**

(a) Draw the life cycle of a named downy mildew of your choice.

(15 marks)

(b) Giving reasons, discuss the disease management procedures you would employ to control the named downy mildew.

(10 marks)

[25 marks]**QUESTION 4**

(a) Prepare a table on plant resistance mechanisms. Use the format below.

(10 marks)

	Preformed	Induced
Physical		
Chemical		

(b) Discuss two (2) of the items you provided in each box.

(15 marks)

[25 marks]

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QUESTION 5

(a) Draw a tree to show the relationships between the epidemiological principles of plant disease control and

- (i) the objects or 'targets' of disease,
- (ii) the control measures,
- (iii) events in the life-cycle of the plant pathogen.

(15 marks)

(b) Enumerate disease management strategies routinely employed by Swazi farmers in their yearly production of maize.

(10 marks)

[25 marks]

QUESTION 6

Choose any five symptoms from the list below. For each symptom, describe and explain how it is formed and then name a disease that manifests itself in that way.

(5 x 5marks)

(a) Wilting,

(b) Spot,

(c) Blight ,

(d) Variegation,

(e) Tumefaction,

(f) Stunting,

(g) Damping-off.

[25 marks]

END OF EXAMINATION PAPER