



2nd SEMESTER FINAL EXAMINATION 2018/2019

PAGE 1 OF 3

UNIVERSITY OF ESWATINI

MAIN EXAMINATION PAPER

PROGRAMME: BACHELOR OF SCIENCE IN AGRONOMY LEVEL 2, BACHELOR OF SCIENCE IN AGRONOMY YEAR 3, BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATIONS LEVEL 2, BACHELOR OF SCIENCE IN AGRICULTURAL EXTENSION LEVEL 2, BACHELOR OF SCIENCE IN HORTICULTURE LEVEL 2, AND BACHELOR OF SCIENCE IN HORTICULTURE YEAR 3

COURSE CODE: CPR206/CP 304

TITLE OF PAPER: PLANT PATHOLOGY AND DISEASE MANAGEMENT

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR QUESTIONS

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

QUESTION 1

Name the causal agents of the following diseases.

- a) Late blight (4 Marks)
- b) Gray leafspot on maize (4 Marks)
- c) Common rust on maize (4 Marks)
- d) Early blight (4 Marks)
- e) Anthracnose on beans (4 Marks)
- f) Halo blight on beans (5 Marks)

[25 Marks]

QUESTION 2

Explain the following:

- a. Hypovirulence (3 Marks)
- b. Polycyclic disease (2 Marks)
- c. dikaryotic cell (3 Marks)
- d. An alternate host (2 Marks)
- e. A chlamyospore (3 Marks)
- f. A Homothallic fungus (3 Marks)
- g. A coenocytic mycelium (2 Marks)
- h. A symptom (2 Marks)
- i. A conidiophore (2 Marks)
- j. An ooze test (3 Marks)

[25 Marks]

QUESTION 3

- a) Name five diseases that attack groundnuts (5 Marks)
- b) List the ascocarps of Ascomycetes (6 Marks)
- c) List any eight (8) symptoms that are caused by viruses on crops. (8 Marks)
- d) What is the difference in the function between a nonhost-specific and a host-specific toxin in pathogenesis? (6 Marks)

[25 Marks]

QUESTION 4

A Farmer who has a crop of tomatoes covering 5 hectares and green pepper covering 3 hectares has started noticing a problem with both his crops. The farmer benefitted from a canal that was constructed by the community to irrigate their crops. To irrigate, the farmer therefore, just diverts the water from the canal into his field where he uses furrow irrigation. Recently he started noticing that his crop is starting to wilt no matter how much water he applies the problem seems to become more and more serious. What is puzzling the farmer the most, is that all along his crop was healthy and even now the crop is not showing any sign of disease (ie no discoloration on the leaves and stems) except for the wilting. He first started noticing the problem during the hot part of the day but the plants would recover later in the day when it gets cool. However, of late the plants are no longer recovering instead more plants are showing the same symptoms. As the Plant Pathologist in the Ministry of Agriculture can you diagnose the disease and advise the farmer of what to do now and in the future.

- a. What do you think the problem is? (4 Marks)
- b. How can you confirm your suspicion (5 Marks)
- c. Describe symptoms of this particular disease (6 Marks)
- d. What should the farmer do to this particular crop to limit the damage (4 Marks)
- e. What should the farmer do in future to manage the disease? (6 Marks)

[25 Marks]

QUESTION 5

You are the Plant Pathologist in your ministry responsible for feeding your country. The Ministry is promoting Conservation Agriculture (CA) as a farming method that should be used in order to mitigate the effects of climate change.

- (i) What would be your position or take on this promotion of CA? (10 Marks)
- (ii) Using a disease on a crop of your choice, explain the negative impact the adoption of CA would have on the disease if used generally. (15 Marks)

[25 Marks]