



THE UNIVERSITY OF ZAMBIA
SCHOOL OF AGRICULTURAL SCIENCES
DEPARTMENT OF PLANT SCIENCE

Third Year Examination for Bachelor of Agricultural Sciences

AGC 3342: Crop Protection

2015/16 Final Examination

Date: 7th July, 2016

Time: 09:00 – 12:00 hrs

Venue: GLT

Instructions:

- There are three (3) sections in this Examination Paper
- Answer section A and the other sections (both B and C) in two separate answer booklets
- You are required to answer a total of 6 questions

SECTION A (40 MARKS): PATHOLOGY- ANSWER ANY TWO QUESTIONS

Question 1

- a) Discuss how Witchweed (*Striga spp*) causes parasitism in higher plants, clearly highlighting the mechanisms employed and how the process is initiated. (14 marks)
- b) Explain any three ways which has led to a success of plant pathogenic fungi. (6 marks)

Question 2

- a) A disastrous race of a bacterial pathogen, *Colletotrichum lindemuthianum* which exists in Malawi and causes anthracnose disease in common beans is been suspected to have crossed over to Chipata district in Zambia. How would you prove for certain that the new race of the pathogen existing in Zambia is the same race as the known Malawian one. (14 marks)
- b) Explain any three causes of non-pathogenic plant disorder. (6 marks)

*** Question 3**

- a. Explain the differences between a sign and a symptom with reference to plant disease diagnosis. (6 marks)
- b. List four symptoms associated with plant viral infections (4 marks)

- c. Explain the concept of "Plant Disease Triangle" as used in plant pathology. (10 marks)

SECTION B ENTOMOLOGY- ANSWER QUESTION 4 AND ANY OTHER

Question 4

Insects are found in almost every conceivable habitat on the planet earth.

- a. Discuss the reasons that have made Insects very successful animals on earth (12 marks).
- b. There is an increasing realization about the importance of insects to man and the ecosystem. Discuss (8 marks).

Question 5

Insects mainly depend on chemical signals for their communication. Describe the different groups of semiochemicals (10 marks).

Question 6

Briefly describe how insects become pests (10 marks)

SECTION C: WEED SCIENCE- ANSWER QUESTION 7 AND ANY OTHER

Question 7

Weeds are among pests of great economic importance in agriculture. Before a control measure is applied, correct identification of a weed forms a key preliminary step.

- a. Discuss the major classifications of weeds (12 marks).
- b. State the characteristics of annual weeds (4 marks).
- c. List 4 examples of perennial weeds (with correct scientific names) (4 marks).

Question 8

Define cultural control, and state 8 of its components (10 marks).

Question 9

What is biological control of weeds? Briefly state 5 major components of biological control of weeds (10 marks).

END OF EXAMINATION