



*“Investing in Africa’s future”*

**COLLEGE OF HEALTH, AGRICULTURE AND NATURAL  
SCIENCES**

**NACP 403: ENTOMOLOGY**

**END OF FIRST SEMESTER FINAL EXAMINATIONS**

**NOVEMBER/ DECEMBER 2020**

**LECTURER: W. MANYANGARIRWA**

**DURATION: 24 HRS**

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**INSTRUCTIONS**

**ANSWER ONE QUESTION ONLY  
YOUR ANSWERS SHOULD BE TYPED**

**ANSWER ONE QUESTION ONLY**  
**EACH QUESTION IS WORTH 100 MARKS**

**Question One**

- a) Explain how climate change has affected insect communities in different parts of the world. [10 marks]
- b) Give a concise outline of the insect pest spectrum encountered on a crop of major economic importance in Eastern or Southern Africa. Explain how the insect pests are controlled. [30 marks]
- c) Bees have been noted to be dying in huge numbers in North America. What are some of the factors that could have contributed to this problem? [10 marks]
- d) With the use of relevant examples of insect orders, explain how an ecologist can be able to assess the quality of the water in a major river ecosystem. [15 marks]
- e) Explain some of the physiological, ecological and morphological features that have enabled insects to survive on planet earth. [30 marks]
- f) List five major orders found in the insect collection that you made as part of this course. [5 marks]

**Question Two**

- a) The order Hymenoptera is considered to be the most beneficial of all insect orders. From your understanding of the benefits obtained from insects and insect activity, give evidence to support this statement. [10 marks]
- b) Insects are said to have evolved over millions of years. Provide evidence to prove that indeed this is the case. [10 marks]
- c) For a crop that you have studied in detail, give a concise guide on the insect pest spectrum encountered on the crop. Link the insects encountered to the phenological stages of the crop. [30 marks]
- d) With reference to agro-ecosystems of Eastern and Southern Africa, explain why it is important to conserve certain insect species. [15 marks]

- e) Explain why insects are the most dominant group of animals on planet earth.  
[30 marks]
- f) List five major orders found in the insect collection that you made as part of this course.  
[5 marks]

### Question Three

- a) Give a concise outline of the diversity of insect orders in Eastern and Southern Africa.  
[20 marks]
- b) Insects are said to have evolved over millions of years. Provide evidence to support this observation.  
[10 marks]
- c) For a crop that you have studied in detail, give a concise outline of the insect pest spectrum encountered. Suggest ways in which **organic growers** of the crop can control the insects pests encountered.  
[25 marks]
- d) With reference to ecosystems of Eastern and Southern Africa, explain why the region is considered a biodiversity hotspot for insects.  
[10 marks]
- e) Explain the factors that have enabled insects to be the most dominant group of animals on planet earth.  
[30 marks]
- f) List five major orders found in the insect collection that you made as part of this course.  
[5 marks]

**END OF EXAMINATION PAPER**