



*“Investing in Africa’s future”*

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

**NACP 303: ENTOMOLOGY**

**END OF FIRST SEMESTER FINAL EXAMINATIONS**

**NOVEMBER 2021**

**LECTURER: W. MANYANGARIRWA**

**DURATION: 5 HOURS**

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**INSTRUCTIONS**

- 1) Answer ANY ONE OF THE THREE questions
- 2) ALL questions carry 100 marks
- 3) Do not repeat the questions

### Question 1

- a) With reference to the Microgastrinae subfamily of the family Braconidae, explain the importance of the insects in this group. [10]
- b) From your coverage of insect pests of different crops that you have studied, explain the importance of the bollworm (*Helicoverpa armigera*). [15]
- c) Explain the factors behind the success of insects as a group of animals on planet earth. [30]
- d) Explain why the cotton crop is called “The Entomologist’s Crop”. [10]
- e) Explain the importance and use of insects in the assessment of water Quality in the ecosystem. In your discussion cite the relevant insect orders. [25]
- f) From the insect collection that you have made at Africa University, list at least two families in each of the following orders: Hemiptera, Hymenoptera, Orthoptera, Diptera, Coleoptera. [10]

### Question 2

- a) With reference to the rural areas of Africa, explain how communities can benefit from insects or products from insects. [30]
- b) Name any two major families in the following orders as observed in your insect collection; Hemiptera, Coleoptera, Diptera, Hymenoptera, Lepidoptera. [10]
- c) Explain why it is easier to set up a biological control program on a perennial crop such as coffee as opposed to an annual crop such as sugarbean. [10]
- d) Discuss the importance of scouting before embarking on a spray programme in any given crop. [10]
- e) Insects have evolved from their ancestral forms over millions of years, In the process, some have lost their wings. Give possible reasons why this could have happened. [10]
- f) Give a concise outline of factors that have enabled insects to dominate planet earth as a group of animals. [30]

### Question 3

- a) Discuss the importance of scouting before spraying in any given crop. [10]
- b) Southern Africa is very rich in insect diversity. Discuss the importance of this diversity for scientific study. [10]
- c) Explain the factors behind the success of insects as a group of animals on planet earth. [30]
- d) Explain why in roses and other cutflowers it is important not to use chemicals that are very harsh. [10]
- e) Give a concise account of the reasons why even though 99% of insects are not harmful to man, we still need to worry about the 1% of the insects. [20]
- f) From the insect collection that you have made at Africa University, list at least two families in each of the following orders: Hemiptera, Lepidoptera, Hymenoptera, Diptera, Coleoptera. [10]
- g) In the past, the insect order blattodea was said to be different from the order Isoptera. Right now, Isoptera is now considered to be a sub-order of blattodea. Discuss the factors behind this change. [10]

**End of Examination Paper**