

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION AND BACHELOR OF SCIENCE

ZOOL 321: FUNDAMENTALS OF ENTOMOLOGY

STREAMS: Y3S1 BSC (AGED, BIO)

TIME: 2 HOURS

DAY/DATE: THURSDAY 06/12/2018

2.30 P.M – 4.30 P.M

INSTRUCTIONS

- **Answer all questions in section A and any one from section B**

SECTION A (30 MARKS)

1. (a) Give one economic importance for each of the following insect orders. [3 marks]
 - (i) Hemiptera
 - (ii) Hymenoptera
 - (iii) Neuroptera(b) Illustrate with a labelled diagram the following types of insect antennae. [3 marks]
 - (i) Aristate
 - (ii) Plumose
 - (iii) Moniliform
2. Explain how the following features have led to the success of insects.
 - (a) Metamorphosis. [2 marks]
 - (b) Cuticle [2 marks]
 - (c) Mouth parts. [2 marks]
3. (a) Outline the characteristics used to recognize social insects. [3 marks]
(b) Explain the role of pheromones in insect communication. [5 marks]
4. (a) Describe the general morphology of cutting and chewing parts. [4 marks]
(b) Give two other types of insect mouth parts. [2 marks]

5. (a) A pesticide was applied in a greenhouse but it did not control the pest. Give three reasons why the control effort might have failed. [3 marks]
- (b) Outline the advantages of integrated pest management (IPM) in the control of insect pests. [3 marks]
6. Explain briefly the following types of insect development.
- (a) Holometabolous [2 marks]
- (b) Ametabolous [2 marks]
- (c) Hemimetabolous [2 marks]
7. (a) Give two functions of ecdysiotropin (ECT) in insects endocrine systems. [2 marks]
- (b) Explain the role of ecdysone in metamorphosis. [3 marks]
8. (a) List the benefits of insects in ecosystems. [4 marks]
- (b) Describe three types of insect larvae. [3 marks]

SECTION B (20 MARKS)

9. Give a detailed account of the reproductive systems in insects. [20 marks]
10. Discuss factors that lead to outbreaks of pests. [20 marks]
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