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FINAL EXAMINATION 2015

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UNIVERSITY OF SWAZILAND

SUPPLEMENTARY EXAMINATION PAPER

PROGRAMME: B.SC. IN AGRICULTURAL EDUCATION YR 2, B.SC. IN  
AGRONOMY YR 2 AND B.SC. IN HORTICULTURE YR 2

COURSE CODE: CP 203

TITLE OF THE PAPER: AGRICULTURAL ENTOMOLOGY

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER QUESTION 1 AND ANY OTHER THREE (3)  
QUESTIONS

**DO NOT OPEN UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATOR**

**Question 1**

- a) Define the following terms.
  - i. Pterygota (1 mark)
  - ii. Apterygota (1 mark)
  - iii. Endopterygota (1 mark)
  - iv. Exopterygota (1 mark)
  - v. Parthenogenesis (1 mark)
  - vi. Arrhenotoky (1 mark)
  - vii. Thelytoky (1 mark)
  - viii. Molting (1 mark)
  - ix. Subimago (1 mark)
  - x. Metamorphosis (1 mark)
- b) What are the differences between the two insect Orders?
  - i. Diptera and Strepsiptera (2 marks)
  - ii. Homoptera and Heteroptera (2 marks)
  - iii. Orthoptera and Blattaria (2 marks)
  - iv. Lepidoptera and Trichoptera (2 marks)
  - v. Microcoryphia and Thysanura (2 marks)
- c) What are the roles of the following body parts?
  - i. Proventriculus (1 mark)
  - ii. Crop (1 mark)
  - iii. Mouth (1 mark)
  - iv. Ventriculus (1 mark)
  - v. Peritrophic membrane (1 mark)

**(25 Marks)**

**Question 2**

- a) With the aid of a diagram, describe the following antennae:
- i. Moniliform (2 marks)
  - ii. Clayate (2 marks)
  - iii. Capitate (2 marks)
  - iv. Filiform (2 marks)
  - v. Serrate (2 marks)
  - vi. Pectinate (2 marks)
  - vii. Genuiculate (2 marks)
  - viii. Plumose (2 marks)
  - ix. Aristate (2 marks)
  - x. Setaceous (2 marks)
- b) Draw an insect wing and label the different parts. (5 marks)
- (25 marks)**

**Question 3**

- a) What are the functions of the following types of legs?
- i. Gressorial (2 marks)
  - ii. Cursorial (2 marks)
  - iii. Saltatorial (2 marks)
  - iv. Natatorial (2 marks)
  - v. Fossorial (2 marks)
  - vi. Raptorial (2 marks)
  - vii. Corbiculum (2 marks)
  - viii. Scansorial (2 marks)

b) Describe the following:

- i. Tegmina (1 mark)
- ii. Elytra (1 mark)
- iii. Hemelytra (1 mark)
- iv. Halteres (1 mark)
- v. Membranous wing (1 mark)
- vi. Scaly wing (1 mark)
- vii. Fringed wing (1 mark)
- ix. Tergum (1 mark)
- x. Vertex (1 mark)

**(25 marks)**

**Question 4**

a) State the functions of each of the following hormones and where each is secreted in the insect body.

- i. Neurohormones (4 marks)
- ii. Prothoracicotropic hormone (4 marks)
- iii. Ecdysteroid (4 marks)
- iv. Juvenile hormone (4 marks)

b) What is the importance of ventilation in aquatic insects? (3 marks)

c) List **three (3)** insect Families with a closed tracheal system. (3 marks)

d) List **three (3)** insect Families with an open tracheal system. (3 marks)

**(25 marks)**

**Question 5**

- a) Name **five (5)** major insect pests of stored grain in Swaziland. (5 marks)
  - b) Describe how each of the pests mentioned above can be identified. (10 marks)
  - c) Explain how the above pests can be prevented or controlled? (10 marks)
- (25 marks)**