



UNIVERSITY OF SWAZILAND

2nd SEM. 2017/2018

SUPPLEMENTARY EXAMINATION PAPER

PROGRAMME: B.Sc. AGRICULTURAL EDUCATION YEAR 4
B.Sc. ANIMAL SCIENCE YEAR 4
B.Sc. AGRICULTURAL & BIOSYSTEMS ENGINEERING
YEAR 4

COURSE CODE: AS 401

TITLE OF PAPER: APICULTURE

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS

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

QUESTION 1

- a) Give an account of the work of any **three** of the following in beekeeping: Rene Antoine Ferchault de Reaumur, Beowulf Cooper; Aristotle; Francois Huber, Martin Lindauer and Karl von Friesch. **(15 Marks)**
- b) Describe metamorphosis in the male caste of honeybee, starting at day one, when the egg is laid and finishing with the emergence of the insect. **(10 Marks)**

QUESTION 2

- a) The Langstroth hive is one of the hives you have learnt about in class. Describe this hive's features and their functions. **(16 Marks)**
- b) Discuss the three lines of defense. **(9 Marks)**

QUESTION 3

Write an essay under the topic "bee feeding". **(25 Marks)**

QUESTION 4

Write a scientific account of the composition of nectar and its subsequent conversion into honey. Describe, with explanations, what the beekeeper must do to ensure that it remains a first-class product. **(25 Marks)**

QUESTION 5

Describe the following;

- a) Varroa mite **(5 Marks)**
- b) The life cycle of the varroa mite; **(5 Marks)**
- c) The effects of varroa mites on individual bees in an infested colony; **(5 Marks)**
- d) How varroa spreads; **(5 Marks)**
- e) Its treatment. **(5 Marks)**