JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN FOOD SECURITY

3ND YEAR 2ND SEMESTER 2016/2017 ACADEMIC YEAR

REGULAR

COURSE CODE: AAS 3325

COURSE TITLE: APICULTURE AND SERICULTURE

EXAM VENUE: **STREAM: BSc. (Food Security)**

DATE: --- **EXAM SESSION: --**
TIME: 2 HOURS

Instructions:

1. **Answer ALL questions in section A and ANY other 2 Questions in section B.**
2. **Candidates are advised not to write on question paper.**
3. **Candidates must hand in their answer booklets to the invigilator while in the examination room.**

SECTION A (30 MARKS)
Answer ALL questions in this section

1. Explain the following:

a). Dfl b). The number of dfl's in 5 cases of *Bombyx mori* eggs (2 marks)

2. Distinguish between fibroin and sericin. (2 marks)

3. Briefly describe the optimal conditions for storage of silk. (2 marks)

4. a). State three qualities of silk. (3 marks)

b). What name is given to the process of unwinding silk from a cocoon. (2 marks)

5. Give the following:

a). three races of *A. mellifera* (3 marks)

b). two varieties of mulberry. (2marks)

c). three species of mulberry. (2 marks)

c). three hive pests. (3 marks)

d). three commercial hive products. (3 marks)

6. Briefly explain how *Apis mellifera* produces bees wax. (3 marks)

7. Distinguish between mulberry and non-mulberry silk. (2 marks)

8. Name the two INDISPENSABLE hive accessories. (1 mark)

SECTION B: (40 MARKS)
Answer ANY TWO questions from this section

1. a). Complete the following table: (8 marks)

Name of silk spinning sp.	Type of silk	Host plant
1. __	Mulberry silk	__
2.*A. panda*	__	__
3.__	__	Acacia
4.__	__	mango

b). State the following:

i). The speed at which silkworms (*B. mori*) churns out silk during spinning of a cocoon. ($2_{1/2}$ marks)

ii). The length of silk filament made by the silkworm. ($2_{1/2}$ marks)

iii). Why the name silkworm as applied to *B. mori* is not correct scientifically. ($2_{1/2}$ marks)

iv). The only occasions when the queen (*A. mellifera*) leaves the hive. ($2_{1/2}$ marks)

2. a). Discuss the causes of absconding and migration and swarming and how these can be avoided or minimized in *A. mellifera*. (6 marks)

b). Distinguish among Langstroth, Top bar and Logwood hives. (4 marks)

c).Describe the method of infection and transmission of pebrine disease among silkworms, *B. mori.* (4 marks)

d). Distinguish among queen, drones and workers in A. *mellifera* colony. (6 marks)

3. a). Explain how mulberry, *Morus alba* can form the basis of rural industrialization through cottage processing. (5 marks)

b). Distinguish between young and old age silkworms. (5marks)

c). Explain the following:

i). the number of instars and of moults in *B. mori* larvae. (2 marks)

ii). Two differences between wild and mulberry silk cocoons. (2 marks)

iii). One similarity between *Gonometa* sp and *B. mori* cocoons. (2 marks)

iv). The life cycle of *B. mori*. (4 marks)