JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

UNIVERSITY EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE IN FOOD SECURITY

3RD YEAR 2ND SEMESTER 2013/2014 ACADEMIC YEAR

REGULAR

COURSE CODE: AAS 3327

COURSE TITLE: Apiculture and Sericulture

EXAM VENUE:LR 7 **STREAM: BSc [Food Security]**

DATE:11/12/14 **EXAM SESSION: 2.00 – 4.00PM**

TIME: 2.00 HOURS

Instructions:

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

SECTION A [30 MARKS]

1. a) Name two Orders of insects that are known for beneficial species. [2 marks]

   b) State three reasons why not all members of the class Insecta [Hexapoda] are considered noxious or harmful. [3 marks]

2. a) Distinguish between *Bombyx mori* and *Anaphe panda* cocoons. [1 marks]

   b) Briefly explain why the name silk worm as applied to *Bombyx mori* is not correct scientifically. [1 mark]

3. a) Briefly describe the life cycle of the silkworm, *Bombyx mori.* [1 marks]

   b) State three importance of sericulture enterprise. [3 marks]

4. a) Name three major diseases of the silkworm, *Bombyx mori* [3 marks]

   b) State five conditions that must be considered for successful raising of silkworms *[Bombyx mori]* for achieving high cocoon productivity [2 marks]

5. a) State three factors that can cause swarming in the African honey bee, *Apis mellifera* [3 marks]

   b) State three feasible interventions for reducing swarming behavior among *Apis mellifera* [3 marks]

6 a) Briefly describe the materials collected by Apis *mellifera* from plants for the livelihood of its colony. [2 marks]

   b) Briefly describe how bees make wax for construction of combs. [1 marks]

7. a) Name two melliferous plants found in western Kenya. [2 marks]

   b) Briefly state why honey is considered an important nutrition enhancing food commodity. [1 marks]

8 a) Name one crops whose yields are believed to increase through bee-mediated pollination services. [1 marks]

   b) Name one melliferous plant that simultaneously produces both nectar and pollen. [1 mark]

SECTION B [40 MARKS]

8. Compare and contrast the different methods of beekeeping with Log wood, Top bar and Langstroth beehives. [20 marks]

9. Discuss the role of bees in agriculture and why there is low adoption of Apiculture technology among farmers in western Kenya. [20 marks]

10. Discuss how mulberry plant [*Morus alba*], silkworm frass and pupae [both from and of *Bombyx mori* respectively] can be mobilized to provide income, food and nutrition security in areas where traditional farming has failed to adequately address these. [20 marks]