JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF AGRICULTURE AND FOOD SCIENCES

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

3RD YEAR 1ST SEMESTER 2013/2014 ACADEMIC YEAR

MAIN

COURSE CODE: APT 3315

COURSE TITLE: EMTOMOLOGY AND FOOD PRODUCTION

EXAM VENUE:LR 9 **STREAM: (BSc.Food Security)**

DATE: 13/8/14 **EXAM SESSION: 9.00 – 11.00AM**

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 the 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.

1. (a) Outline the damage in bean due to the African bollworm. [4 marks]
   (b) Briefly explain using examples the damage caused by insects with chewing and those with sucking mouth parts. [6 marks]

2. (a) List and briefly explain the three variations of sexual reproduction in insects. [6 marks]
   (b) Outline any four factors to take into account when choosing a good natural enemy for biological control of insect population. [4 marks]

3 (a) Briefly explain the difference between host resistance and tolerance to infestation by insect. [4 marks]
   (b) Mention citing example any two orders of the class insect normally of importance as human food. [4 marks]
   (c) Mention any two types of members of the class nematode that are important to the banana farmer. [2 marks]

SECTION B [40 MARKS]

Answer ANY TWO questions.

1. Explain in general terms how the development and migration styles of insects could affect the pest build up in plants. [20marks]

5. (a) Explain what you understand by the terms biological and chemical pest control in plants. [8 marks]
   (b) Discuss the merits and demerits of biological and chemical pest control in green house vegetable farming. [12marks]

6. (a) *Helicoverpa armigera* is an important pest in Africa. Briefly describe its life cycle. [6 marks]
   (b) Using examples describe the economic impact of this pest in maize farming in Kenya [8 marks]
   (c) Illustrate briefly and clearly two other vegetable crops in which this pest is a problem in Kenya. [6 marks]