JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

UNIVERSITY EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCES

4TH YEAR SECOND SEMESTER 2016/2017 ACADEMIC YEAR

REGULAR

COURSE CODE:	**SBI 3424**
COURSE TITLE:	**ECONOMIC ENTOMOLOGY AND PEST CONTROL**
EXAM VENUE:	**STREAM: (BSc. Bio)**
DATE:	**EXAM SESSION:**

TIME: 2 HOURS

Instructions

1. **Answer ALL questions in Section A (compulsory) and ANY 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: SHORT ANSWER QUESTIONS (30 MARKS)

1. Distinguish between biological and mechanical vectors of human diseases, and give an example for each. (3 marks)
2. Using specific examples differentiate between homometabolous and hemimetabolous life cycles in insects. (3 marks).
3. List three structural differences between culicine and anopheline mosquitoes. (3 marks)
4. Males of certain insects are strictly phtytophagous while females of the species are both phytophagous and haematophagous. Site an example of such insects and describe the biological implication of this type of feeding behavior. (3 marks)
5. Outline three differences between promastigotes and a mastigotes of leishmania parasites that cause Leishmaniasis in humans. (3 marks)
6. State the type of parasite and disease transmitted by the following types of insect vectors. (3 marks)

Insect vector	**Parasite**	**Disease**
Tsetse fly		
Black fly		
Culex mosquito		

7. Explain the ecological limitation of chemical control of insect pests and vectors.(3 marks)
8. List three major methods of malaria transmission in humans. (3marks)
9. Explain the concept of life system. (3marks)
10. Different between r- and k-selection life history strategies in insects. (3 marks)

SECTION B: ESSAY QUESTIONS (40 MARKS)

11. Discuss the life cycle and behavior of sand flies. (20 marks)
12. Discuss factors that contribute to numerical changes in insect populations and site examples where possible. (20 marks)
13. Describe various methods that you would use to control of major vectors of human disease in sub-Saharan Africa. (20 marks)
14. Define the concept of integrated pest management (IPM) and using relevant examples discuss the underlying principles and processes of this particular approach. (20 marks)