JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY

SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES

UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION SCIENCE WITH IT /BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCES

4TH YEAR 2ND SEMESTER 2018/2019 ACADEMIC YEAR

MAIN CAMPUS - REGULAR

COURSE CODE:	**SBT 408/ SBI 3424**	
COURSE TITLE:	**GENERAL ENTOMOLOGY / ECONOMIC ENTOMOLOGY AND PEST CONTROL**	
EXAM VENUE:	**BIO LAB**	**STREAM: (BED/BIO)**
DATE:	**02/04/2019**	**EXAM SESSION: 9.00-11.00AM**
TIME: 2 HOURS		

Instructions:

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

1. Observe Fig.1 in a photograph of an insect vector. (a) Identify the vector (1 mark) and (b) support your answer by citing two unique observable features (2 marks)

Fig.1

2. Describe three properties you would consider when selecting an ideal insecticide for use on the shores of Lake Victoria (3 marks)
3. With reference to malaria, distinguish between a definitive and intermediate host, citing an example in each case (3 marks)
4. List three features that you would use to identify *Anopheles* mosquito larvae sampled from a small pool of water in Bondo town (3 marks)
5. *Leishmania* parasites occur in two distinct morphological forms. Name the forms and outline three difference between them (3 marks)
6. Study the table below and fill in the blank spaces provided (3 marks)

Insect vector	**Parasite**	**Diseases**
	Onchocerca volvulus	
Tsetse fly (*Glossina* spp)		
		Malaria

7. A mosquito is one of the most hunted insect-vector of public health importance. Besides malaria, list six other mosquito-borne diseases (3 marks)

8. Explain why, nagana (animal trypanosomiasis) is more common than human in trypanosomiasis in Africa. (3 marks)

9. Describe three types of concepts or models that may explain the dynamics of insect population systems in Mount Kenya forest (3 marks)
10. Describe three types of competition that influence the number of haematophagous insects in terrestrial ecosystems (3 marks)

SECTION B: ESSAY QUESTIONS (40 MARKS)

11. Discuss the characteristics of r- and k-selection survival strategies in insect vectors (20 marks)
12. Using relevant examples describe the different types of synthetic organic insecticides and give five reasons as why they should not be used world-wide (20 marks)
13. Discuss the principles and processes of integrated pest management (20 marks)
14. Discuss the life cycle, behavior and control of tsetse flies (20 marks)