JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF HEALTH SCIENCES

UNIVERSITY EXAMINATION FOR MASTER'S IN PUBLIC HEALTH AND MASTER OF BIOMEDICAL SCIENCES (MEDICAL ENTOMOLOGY)

1st YEAR 2nd SEMESTER 2023/2024 ACADEMIC YEAR

MAIN/KISUMU

COURSE CODE: HME 5124

COURSE TITLE: VECTOR ECOLOGY AND POPULATION DYNAMICS

EXAM VENUE:

DATE:

TIME: **3.00 HOURS**

Instructions:

1. **Question 1 is compulsory then answer any other 3 the questions.**

Instruction: Answer Question ONE and ANY other THREE Questions

1. Describe the environmental factors that affect vector abundance of *Anopheles* mosquitoes and malaria transmission. (15 marks)

2. Discuss the influence of human behavior in determination of disease transmission and the effect of animal reservoirs on vector populations. (15 marks)

3. a). Briefly describe the ecology of mosquito breeding sites**.**

b). What are the factors that determine the biting behavior of malaria vectors?

c). Which ecological and environmental factors may lead to emergency of new malaria vector species? (15 marks)

4. Describe the general ecology of vector snails and their role as intermediate hosts of human *Schistosoma* parasites. (15 marks)

5. a). Describe the ecology of arboviral vectors including their survival and longevity strategies.

b). What is the effect of the changing weather conditions on ecology and population densities of *Aedes aegypti*? (15 marks)

6. Describe the use of various traps in monitoring temporal changes in *Ae. aegypti* populations and in assessing the impact of insecticide treatments towards controlling these vectors.. (15 marks)