



**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)**  
**1<sup>st</sup> YEAR 2<sup>nd</sup> SEMESTER 2023/2024 ACADEMIC YEAR**  
**MAIN/KISUMU**

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**COURSE CODE: HME 5121**

**COURSE TITLE: VECTOR PHYSIOLOGY, BIOCHEMISTRY AND PATHOGEN  
INTERACTION**

**EXAM VENUE:**

**DATE:**

**TIME: 3.00 HOURS**

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**Instructions:**

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

1. Answer all questions here (COMPULSORY 15 MARKS)

- a) Define exotoxins, endotoxins and exoenzymes (3 marks)
- b) Illustrate FOUR components of host pathogen interactions ( 4 marks)
- c) Describe the Novel systems used to study vector-pathogen interactions in malaria (8 marks)

**Answer any 3 questions**

- 2. Using a diagram, illustrate the step by step mechanisms of vector pathogenesis (15 marks).
- 3. Describe the biological processes involved in tick pathogen interactions (15 marks)
- 4. Discuss endosymbionts and their application as a vector control strategy (15 marks)
- 5. Describe the molecules involved in parasite-pathogen interactions pertaining to *Mycobacterium tuberculosis* (15 marks).