



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF BIOLOGICAL, PHYSICAL MATHEMATICS AND ACTUARIAL
SCIENCES**

**DEPARTMENT OF BIOLOGICAL SCIENCES
UNIVERSITY EXAMINATIONS FOR THE DEGREE OF MASTER OF SCIENCE IN
APPLIED INSECT SCIENCE
1ST YEAR 2ND SEMESTER 2023/2024 ACADEMIC YEAR**

MAIN CAMPUS - REGULAR

COURSE CODE: SBI 5127

COURSE TITLE: Integrated Vector Management

EXAM VENUE:

STREAM: MSc. Applied Insect Science

DATE:

EXAM SESSION:

TIME: 3 HOURS

Instructions:

- 1. Answer question ONE and ANY other TWO Questions**
- 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.**

1. (a) Justify why integrated vector management is preferred to other vector control strategies (4 marks)
- (b) Describe how insecticide resistance can be managed to achieve effective vector control (4 marks)
- (c) What are the implications of drug and insecticide resistance on public health and food security (4 marks)
- (d) Distinguish between acquired and intrinsic drug resistance against vector-borne diseases (4 marks)
- (e) Describe the potential of developing vaccines against tick-borne and insect-transmitted diseases in the tropics (4 marks)
2. Distinguish between population replacement and population suppression, and explain why such promising technologies have not been deployed widely for the control of insect vectors (20 marks)
3. Discuss the principles and process of integrated vector control (20 marks)
4. Explain how integrated vector management influences achievement of sustainable development goals and factors that limit effective control of insect vectors by use of this strategy (20 marks)
5. Discuss different mechanisms that contribute to drug resistance and various causes of insecticide resistance in sub-Saharan Africa (20 marks)