



W1-2-60-1-6

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
UNIVERSITY EXAMINATIONS 2019/20190 EXAMINATION FOR THE DEGREE OF
EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE IN MEDICAL
PARASITOLOGY AND ENTOMOLOGY
TPE 3102: MEDICAL ENTOMOLOGY**

DATE: FEBRUARY 2020

TIME: 3 HOURS

INSTRUCTIONS: Answer any four questions.

1. a. Identify a disease caused by each of the following vectors and outline their breeding habitats. (10 marks)
 - i. Anopheles arabiensis
 - ii. Culex quinquefasciatus
 - iii. Aedes aegypti
 - iv. Sandfly
 - v. Black flies.
- b. Describe factors that affect vector competence? (10 marks)
- c. Compare phlebotomine sand flies to black flies (simulid). (5 marks)
2. a. Mites are known to be of medical importance, discuss. (20 marks)
- b. Describe the characteristics of anophelines that distinguish them from culicines. (5 marks)
3. a. List five main characteristics of arthropods. (15 marks)
- b. Compare lifecycles of mosquitoes to tsetse flies. (10 marks)
- c. Discuss the differences between hard and soft ticks. (10 marks)
4. a. Explain the purpose and role of entomological monitoring in malaria control. (10 marks)
- b. Describe biological disease transmission in relation to entomology. (10 marks)

- c. List five diseases transmitted by ticks. (5 marks)
5. a. Discuss disease transmission by ornithodoros soft ticks. (10 marks)
- b. Considering that development stages are separated by molts of the exoskeleton, describe the various kinds of development stages in insects? (5 marks)
- c. Describe causes, management and control of Visceral and Cutaneous Leishmaniasis. (10 marks)
6. Describe in detail two nucleic based methods used for identification of Anopheles species complexes. (25 marks)