

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF  
PUBLIC HEALTH**

**PUHE 346: ENTOMOLOGY AND PEST MANAGEMENT**

**STREAMS: PUHE Y3S2**

**TIME: 2 HOURS**

**DAY/DATE: WEDNESDAY 16/4/2025**

**11.30 A.M. – 1.30 P.M.**

**INSTRUCTIONS:**

- 1. Do not write anything on the question paper.**
- 2. Mobile phones and any other reference materials are NOT allowed in the examination room.**
- 3. The paper has three sections. Answer ALL questions in Sections I, II and III.**
- 4. All your answers for Section I (MCQs) should be on one page.**
- 5. Number ALL your answers and indicate the order of appearance in the space provided in the cover page of the examination answer booklet.**
- 6. Write your answers legibly and use your time wisely**

**SECTION 1: MULTIPLE CHOICE QUESTIONS [10 MARKS]**

1. Blackflies are generally known to transmit
  - [a]. Onchocerciasis
  - [b]. Leishmaniasis
  - [c]. Malaria
  - [d]. Chikungunya
2. Guinea worms are classified as
  - [a]. Arachnids
  - [b]. Insecta
  - [c]. Crustaceans
  - [d]. Chilopoda
3. \_\_\_\_\_ is an unusual human psychosexual disorder where an individual experience self-induced sexueroetic arousal and orgasm when ants, cockroaches, or other small creatures are allowed to crawl, creep, or nibble on the body, notably, the genitalia, perianal area, or nipples.
  - [a]. Delusional disorder
  - [b]. Ekbom syndrome
  - [c]. Formicophilia
  - [d]. Delusional parasitosis

## PUHE 346

4. The following are key defining characteristics of *Anopheles* mosquitoes, EXCEPT
  - [a]. They fold their wings scissor-like over their back at rest
  - [b]. They typically rest with their bodies at an angle to the surface they are on
  - [c]. In some genera, the palps are usually shorter than the proboscis
  - [d]. They have distinct patterns of dark and light scales on their wings
5. \_\_\_\_\_ flea species is a major vector for the plague
  - [a]. *Xenopsylla cheopis*
  - [b]. *Pulex irritans*
  - [c]. *Ctenocephalides felis*
  - [d]. *Echidnophaga gallinacea*
6. \_\_\_\_\_ are also known as green or bluebottle flies
  - [a]. House flies
  - [b]. Blowflies
  - [c]. Lesser house flies
  - [d]. Flesh flies
7. The following names are used in different regions to refer to *Tunga penetrans*, EXCEPT
  - [a]. Chigoe flea
  - [b]. Triatomite
  - [c]. Nigua
  - [d]. Suthi
8. The jungle cycle that involves transmission of disease agents between non-human primates and vectors found in the forest canopy is mainly referred as.
  - [a]. Transstadial transmission
  - [b]. Sylvatic transmission
  - [c]. Transgenerational transmission
  - [d]. Enzootic transmission

**In question 9 and 10, indicate whether the statement is TRUE or FALSE.**

9. Cockroaches are laterally flattened, fast-running insects [True/False].
10. Brown rats are smaller than black rats, with a blunt snout and a shorter tail than their body length [True/False]

### **SECTION II: SHORT ANSWER QUESTIONS [40 MARKS]**

1. Define the following terms
  - [a]. Public health entomology [2 marks]
  - [b]. Reservoir host [2 marks]
  - [c]. Pest [2 marks]
2. List eight (8) diseases commonly transmitted by mosquitoes [4 marks]
3. Outline five (5) most important health problems associated with bed bugs in Kenya [5 marks]
4. Tsetse flies are major public health concern responsible for transmitting several trypanosomes (protozoans) of people and animals. Assume you have been deployed in a County X and placed in charge of a programme to control tsetse flies, outline five (5) key physical characteristics of tsetse flies that you would use to correctly identify them for targeted public health interventions [5 marks]

**PUHE 346**

5. Cockroaches are a common public health concern known to adversely affect human health in several ways. Explain five (5) main health concerns associated with cockroaches, and five (5) key public health interventions that a Public Health Officer can deploy to control cockroaches in human dwellings [10 marks]

6. Selective indoor residual spraying (IRS) is a valuable option for vector (s) control in human dwellings. Explain ten (10) key strategic directions for selective indoor residual spraying [10 marks]

**SECTION III: LONG ANSWER QUESTIONS [20 MARKS]**

1. Public health entomologists are charged with surveillance for vector-borne diseases, which include collecting arthropod specimens and testing them for various disease agents. The surveillance is primarily focused on mosquito-borne arboviruses. There is no one-size-fits-all arbovirus surveillance model. Discuss four (4) main surveillance methods for vector-borne diseases, and elaborate the processes involved in each of the surveillance method (VBDs) [20 marks]

---