



# THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

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**MAIN EXAMINATION**

**JANUARY – APRIL 2018 TRIMESTER**

**FACULTY OF SCIENCES**

**DEPARTMENT OF COMMUNITY HEALTH AND DEVELOPMENT**

**REGULAR PROGRAMME**

**CHD 214: ENTOMOLOGY AND VECTOR CONTROL**

**Date: APRIL 2018**

**Duration: 3 Hours**

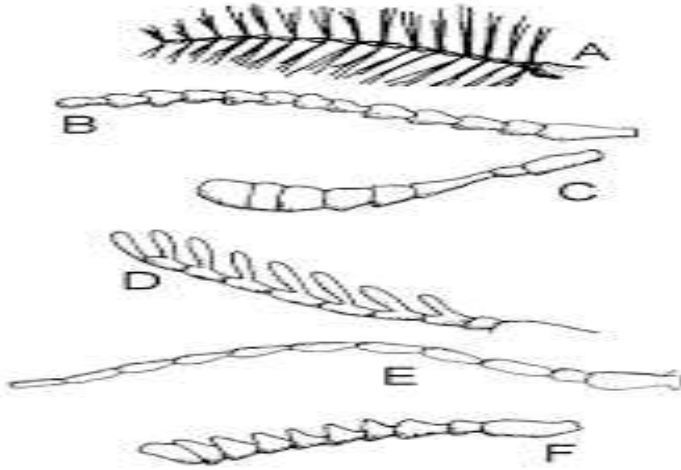
**INSTRUCTIONS: Answer ALL Questions**

## **SECTION A: ANSWER ALL QUESTIONS. 40 MARKS**

- Q1. State and give examples of classes in phylum Arthropoda **(5 marks)**
- Q2. In what ways do arthropods affect the lives of humans and plants **(6 marks)**
- Q3. Describe the concept of vector capacity in disease transmission **(4 marks)**
- Q4. Outline the various modes of transmission of vector borne diseases. **(4 marks)**
- Q5. With examples, state the different insect mouth types and how they are used to transmit disease **(5 marks)**
- Q6. Describe insect host specificity **(5 marks)**
- Q7. What is the vector for Onchocerciasis **(1 mark)**
- Q8. What is the cause of Louse-Borne typhus fever **(1 mark)**
- Q9. \_\_\_\_\_ transmits lyme disease **(1 mark)**
- Q10. The definitive host for *Wuchereria bancrofti* is \_\_\_\_\_ while the intermediate host is \_\_\_\_\_ **(2 marks)**

Q11. Identify the types of insect antennae below:

(6 marks)



**SECTION B: Answer ANY THREE QUESTIONS (60 marks)**

Q1. You have been posted to lead a field team to Central Africa, in an area with high populations of sand-fly. One of your tasks is to control the disease transmitted by sandflies.

- i) Classify this arthropod by: **(4 marks)**
  - a) Class
  - b) Order
  - c) Family
  - d) Genera
- ii) Give any four characteristics of the sandfly **(4 marks)**
- iii) Outline the medical importance of sand flies **(4 marks)**
- iv) Describe any eight management strategies for the sandfly **(8 marks)**

Q2. Insects cause problems to humans. Understanding the morphology of different insects is key if a community health worker is to identify and hence control them.

- i) List the six distinct orders in Class Insecta. **(6 Marks)**
- ii) Draw a well labeled diagram of mosquito mouth parts **(8 Marks)**
- iii) Draw a well labelled diagram of a housefly mouth parts **(6 Marks)**

Q3. Recently, the government of Mauritania had an outbreak of a disease transmitted by the flea. The Ministry of Health, Kenya, gave an alert to all health workers on the potential risk in Kenya. Discuss the following components in that alert:

- i) Describe the life biology of the flea **(8 marks)**
- ii) Outline the three major diseases caused by the flea **(6 marks)**
- iii) Discuss the control measures for fleas **(6 marks)**

Q4. **Lambwe Valey in Homa Bay County** is a geographical habitat of the tsetse fly, which causes disease in human beings characterized by day- time insomnia. Discuss the transmission cycle of trypanosomiasis and the control interventions for the vector for this disease. **(20 marks)**

Q5. Rodents not only destroy stored grains but also cause diseases. As a health worker, you have realized that rodents are an indirect cause of poverty and want to establish a **Zuia Panya Foundation** to tackle this problem. To raise funds for your initiative, you convene a forum to inform stakeholders about rodents

- i) Mention the three major species of rodents **(3 marks)**
- ii) Explain the Public Health Importance and Rodent-borne Diseases **(10 marks)**
- iii) Discuss the rodent control strategies that can be employed in your initiative **(7 marks)**

**\*END\***