



# MACHAKOS UNIVERSITY

University Examinations 2019/2020 academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

SECOND YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN POPULATION HEALTH

PPH 216 PUBLIC HEALTH ENTOMOLOGY

DATE: 21/1/2021

TIME:8.30-10.30 AM

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## INSTRUCTIONS

1. Answer Question 1 (compulsory) and **any two** questions in Section B.
2. Use clean well labelled diagrams wherever appropriate.

## QUESTION ONE (30 MARKS)

- a) Classify insecticides based on their mode of action (3 marks)
- b) With the use of an example, outline the characteristics of members of the class Siphonaptera (3 marks)
- c) Explain the economic importance of the dog flea *Ctenocephalidus canis* to man (3 marks)
- d) Explain the effectiveness of the use of bednets in the management of malaria (3 marks)
- e) Explain three of the most essential items on the label of an insecticide in Kenya (3 marks)
- f) Explain the safe storage of insecticides of public health importance at home (3 marks)
- g) Explain “adenotrophic viviparity” (3 marks)
- h) Explain the concept of “management” of a population of medical disease vector (3 marks)
- i) Complete the table below by filling in the blanks (6 marks)

Disease	economic class	of insecticide	transmitted by	
Scientific name				

1. Pediculosis			
2.		<i>Phlebotomus martini</i>	
3. Filariasis			
4. Chagas disease			

**QUESTION TWO (20 MARKS)**

- a) Explain the process of registration of pest control product for use in Kenya (10 marks)
- b) Discuss the factors that affect the vectorial capacity of an insect (10 marks)

**QUESTION THREE (20 MARKS)**

Compare the life cycles of the mosquito *Anopheles gambiae* with that of the tsetse fly *Glossina pallidipes*

**QUESTION FOUR (20 MARKS)**

Explain the components of the “Sterile Insect Technique” in the management of a named disease vector of medical importance

**QUESTION FIVE (20 MARKS)**

- a) Discuss the Rotterdam Convention (10 marks)
- b) Discuss an effective rodent control program in an infested rural estate (10 marks)