



MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018

**SECOND YEAR FIRST SEMESTER EXAMINATION FOR
THE DEGREE OF BACHELOR OF SCIENCE IN MEDICAL
BIOTECHNOLOGY AND MEDICAL BIOTECHNOLOGY WITH
INFORMATION TECHNOLOGY**

MAIN CAMPUS

PMT 225: MEDICAL ENTOMOLOGY AND VECTOR SCIENCES

Date: 28th February, 2018

Time: 8.30 - 11.30am

INSTRUCTIONS:

- As in the question paper



GENERAL INSTRUCTIONS:

1. Write your University Registration Number on every page on the Answer Booklet you use.
2. Do not write your name on any paper you use.
3. The time allowed for this paper is three (3) hours
4. The questions are set out in TWO (2) sections, A and B
5. Read carefully the additional instructions preceding each section

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ISO: 9001:2008 CERTIFIED

SECTION A

MULTIPLE CHOICES QUESTIONS (MCQ) AND SHORT ANSWERS QUESTIONS (40 MARKS)

Answer ALL Questions

Section (A) Multiple choice questions (10 marks)

1. Hard ticks are distinguished by presence of
 - a) Postanal groove
 - b) Forward projecting forward capitulum
 - c) Anteroventral capitulum
 - d) Chelicerae

2. Some of the diseases that can be associated with lice include:
 - a) Marine typhus fever
 - b) Plague
 - c) Epidemic typhus fever
 - d) Q fever

3. Which of the following malaria transmitting vector is a salty water breeder?
 - a) *Anopheles gambiae*
 - b) *Anopheles funestus*
 - c) *Anopheles gambiae complex*
 - d) *Anopheles melas*

4. Bulbous base for the proboscis is important feature in
 - a) Mosquitoes
 - b) Tsetse flies
 - c) House flies
 - d) Mango flies

- 5 Larviparous myiasis producing flies include:
 - a) *Wohlfartiamagnifica*
 - b) *Stomoxyscalcitrans*
 - c) *Muscadomestica*
 - d) *Cordyllobiaanthropophaga*

6. The mature *Simulium* larva
 - a) Has one pair of caudal bristle
 - b) Has filamentous respiratory gills
 - c) Has a gill spot
 - d) Has a prominent pseudopod called proleg

7. Integrated control:
 - a) Aims to defeat insecticide resistance
 - b) Involves complementary vector control actions
 - c) Is the concomitant use of organochlorines and organophosphates
 - d) Does not provide ecologically sound approaches

8. The chess-board pattern markings on the abdomen are characteristic of:
 - a) *Oestrus* species
 - b) *Dermatobia* species
 - c) *Sarcophagi* species
 - d) *Phormia* species

9. Anautogenous development is associated with the females of:
 - a) *Fannia canicularis*

- b) *Wohlfartia magnifica*
- c) *Musina stabulans*
- d) *Anopheles arabiensis*

10. The “urban” mosquito is a term used for

- a) *Anopheles meras*
- b) *Culex quinquefasciatus*
- c) *Aedes aegypti*
- d) *Phlebotomus martini*

Section (B) Short Answer Questions (30 marks)

1. List four (4) general characteristics of arthropods (4 marks)
2. List down four (4) types of pathogens transmitted by arthropods. (4 marks)
3. Define Bishopp’s classification in myiasis(4 marks)
4. Briefly describe the larval development of *Onchocerca volvulus* in the *simulium* vector. (4 marks)
5. Briefly explain gonotrophic cycle (4 marks)
6. Differentiate between **transstadial** and **transovarian** disease transmission (2 marks)
7. Mention at least three diseases transmitted by hard ticks (3 marks)
8. Briefly discuss the life cycle of *schistosomes* vector host (5 marks)

SECTION B (30 MARKS)

Section (C) Answer Question 9 and any other question.

9. Describe the life cycle of *Glossina* fly and its control measures (15 marks)
10. Discuss the life cycle of *plasmodium* parasite inside the vector and the vectors control (15 marks)
11. a) Discuss medical importance of fleas as well as outlining sylvatic and urban plague cycles. (10 marks)
- b) State medical importance of soft ticks (5 marks)