



Technical University of Mombasa

Faculty of Applied and Health Sciences

DEPARTMENT OF MEDICAL SCIENCES
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICAL
LABORATORY SCIENCES
BMLS 12S REGULAR

AML 4302 : VECTOR BIOLOGY OF HUMAN PATHOGENS

SEMESTER EXAMINATION

APRIL 2014 SERIES

2

HOURS

Instructions to candidates:

This paper consists of **TWO** sections **A** and **B**

Section A -Contains MCQS, Answer **ALL** questions in **Section B**.

SECTION A - MCQs - (30marks)

1. Blackflies are also known as:-
 - a) Chrysops
 - b) Culicoides
 - c) Simulium
 - d) Phlebotomine
 - e) Deerflies
2. Which of the following have caudal bristles and match stick hairs
 - a) Larvae of culicoides
 - b) Larvae of simulium
 - c) Larvae of chrysops
 - d) Larvae of Glossina
 - e) Larvae of phlebotomine
3. Triatomine bugs which are domesticated, adapted to human habitation include the following except:
 - a) Rhodnius neglectus

- b) Panstrongylus species
 - c) Rhodnius prolixus
 - d) Triatoma infestan
 - e) Triatoma phyllosoma
4. Sucking lice belong to class insector and its order is:-
- a) Collecoptera
 - b) Mollaphaga
 - c) Siphonaptera
 - d) Anoplura
 - e) Hemlptera
5. Baffalo fly refers to the following arthropod:-
- a) Rediviid bugs
 - b) Simulium
 - c) Chrysops
 - d) Sandfly
 - e) Tsetsefly
6. The hairy appearance , large eyes and wings held erect ever the body are characteristics of:
- a) Tabanidflies
 - b) Culicoides
 - c) Simulium
 - d) Tsetse fly
 - e) Phlebotomus
7. Which of the orthopods transmittes diseases by contamination
- a) Mosquitoes
 - b) Triatomine bugs
 - c) Testsefly
 - d) Lice
 - e) Sandfly
8. The larvae with characteristics features of pseudopods grabbers organ and analpad is:-
- a) Chrysops larvae
 - b) Culicoides larvae
 - c) Phlebotomus larvae
 - d) Simulium larvae
 - e) Assasin bug larvae
9. Urticating is a protective mechanism of arthropods caused by
- a) Arthropods that produce chronic infestation known as vagabonds diseases
 - b) Arthropods that inject saliver containing secretions causing irritation
 - c) Arthropods that produce poisonous hair or spine
 - d) Arthropods that produce venom or poison fluids
 - e) Arthropods that discharge body fluids causing blisters on the skin
10. The medical importance of triatomine bugs include:-

- a) Vector for kalar-azar
- b) Vector for Trypanosoma rhodesiense
- c) Vector for trypanosome gambiense
- d) Vector for chagas disease
- e) Vector for filariasis

11. The mosquito larvae commonly used for biological control include:-

- a) Aedes mosquito larvae
- b) Anopheles mosquito larvae
- c) Culex mosquito larvae
- d) Toxorhynchites mosquito larvae
- e) Mansonia mosquito larvae

12. The orthopteran that is characterized by closed cell with a shape of a hatchet and forward pointing proboscis is:-

- a) Sandfly
- b) House fly
- c) Simulium
- d) Chrysops
- e) Tsetsefly

13. The shell of a snail with a spiral shape belong to the genus:-

- a) Biomphalaria
- b) Lymnaea
- c) Oncomelania
- d) Bulinus
- e) Cleopatra

14. The following Arthropods do not cause scabies except:

- a) Fleas
- b) Lice
- c) Ticks
- d) Mites
- e) Bedbugs

15. The following eggs of mosquito do not withstand desiccation except of:

- a) Mansonia
- b) Anopheles
- c) Aedes
- d) Culex
- e) Conguillettidia

16. Which of the following organisms is transmitted by lice causing Trench fever

- a) Bartonella quintana
- b) Borrelia recurrentis
- c) Rickettsia prowazeki
- d) Yersinia pestis
- e) Rickettsia typhi

17. The characteristics feature of “diseal cell” at the centre of wing is:
- Tsefse fly
 - Phlebotomus
 - Simulium
 - Culicoides
 - Chrysops
18. Vescication is caused by caused by the Arthropod:-
- Bees
 - Befferflies
 - Catterpillars
 - Wasps
 - Nairobi eye beetle
19. The family muscidae do not include the following except:-
- Culicoides
 - Glossinae
 - Phlebotomine
 - Simulieum
 - Chrysops
20. The female reduviid bug is identified from the male bug by:
- Female bug have rounded tip abdomen
 - Eyes of the female bugs are quite far from the antennae
 - Eyes of the female bugs have shortest head
 - Male bugs do not fee on blood
 - Female bugs have pointed tip abdomen
21. The hard ticks which exhibit two host tick in their life include:-
- Boophilus species
 - Hyaloma species
 - Dermacenter species
 - Haemaphysalis species
 - Ornithodoros species
22. The gastropod that is responsible for transmission of schistosoma haematobium include:-
- Biomphalaria
 - Onchomelanic
 - Lymnea
 - Bulinus
 - Aperculated snails
23. The external morphology of anopheles mosquito include:
- A pair of wings with no scales and colourles
 - A pair of silvery spotted wings, without scales
 - The pair of wings are clear with no scales
 - The pair of wings are spotted, dark and pale scales in small blocks on vein
 - The abdomen and the log are silver spotted

24. The mosquito in the family Anophelinae genus Anopheles has the characteristics of:
- Larvae have no breathing tube on eight abdominal segment
 - Larvae have breathing tube on the eight segment
 - Body of the larva hangs head down from the surface of water.
 - The eggs are laid in raft and lack floats
 - The eggs are laid singly and resistant to desiccation
25. The resting and feeding positions of the adult female of Aedes mosquitoes is:-
- With the head down and hind legs raised to the surface
 - With the head raised and the hind down to the surface
 - With both the head and one leg raised to the surface
 - With the body down ; legs and head raised to the surface
 - With the body parallel to surface with all the legs on surface
26. Residual insecticides for mosquito control include:
- Malathion, mosquito coil and fenithion
 - Bacillus thuriqiensis, malathion and carbonate
 - Malathion, fenithion and carbonate
 - Malathion diethyltoluamide and carbonate
 - Malathion, malarial oil and carbonate
27. The study of vector refers to
- Insects of medical and veterinary importance
 - The science of Entomology of vectors
 - The relationship of diseases and the vectors
 - The study of behavior, life cycle, biology and characteristics of the vector
 - The study of morphological features of the vectors
28. Differentiation of male and female tsetse fly may not be important on transmission because:-
- The males and females feed on nectar
 - Only the female feed on blood
 - They feed on animals blood only
 - They can not be distinguished
 - Both males and females are blood feeders
29. The crab louse is synonymous to
- Pediculus capitis
 - Pondiculus corporis
 - Pandicules humans
 - The head louse
 - Pthirus pubis
30. Tunga penctrans have the following instars:
- Four instars
 - Three instars
 - Two instars
 - One instar

e) No instar stages

SECTION B ESSAY
(ANSWER ALL QUESTION IN THIS SECTION)

1. (a) Discuss mosquito behaviours and how this behavior is related to transmission **(10marks)**
- (b) Outline five morphological or behavioural characteristics of genera glossina
(Tsetsefly) **(5marks)**
- (c) Explain briefly the medical importance of fleas **(5marks)**
2. (a) Explain briefly the medical importance of phlebotomine sand flies under the following subheadings:-
- (i) Annoyance **(2marks)**
 - (ii) Leishmaniasis **(4marks)**
 - (iii) Bartonellosis **(2marks)**
 - (iv) Sandfly fever **(2marks)**
- (b) Mention five characteristics for genera simulium (Blackly) **(5marks)**
- (c) List two medical importance of triatomine bugs **(2marks)**
- (d) Mention three medical importance of mosquitoes and give one example of the genus responsible **(3marks)**