



# TECHNICAL UNIVERSITY OF MOMBASA

*Faculty of Applied and Health Sciences*

**DEPARTMENT OF MEDICAL SCIENCES**

CERTIFICATE IN MEDICAL LABORATORY SCIENCES  
(CMLS 12J)

**AML 1231: ENTOMOLOGY (VECTOR BIOLOGY)**

**SPECIAL/SUPPLEMENTARY : EXAMINATIONS**

**SERIES: OCTOBER 2013**

**TIME: 2 HOURS**

## **INSTRUCTIONS:**

You should have the following for this examination

- *Answer booklet*

This paper consists of **TWO** sections.

Answer all questions in **Section A** and **B**.  $\frac{1}{2}$  marks deducted for any wrong answer in **Section A**.

*This paper consists of 7 PRINTED pages*  
**SECTION A (40MARKS)**

1. The family culicidae has the following genera except
  - a) Culex
  - b) Aedes
  - c) Mansonia
  - d) Anopheles
  - e) Tabanidae
2. Which of the following does not belong to the sub order- nematocera
  - a) Culicidae
  - b) Psychodiade
  - c) Simulidae
  - d) None of the above
3. Which one of the following is not a speices of a mosquito
  - a) Anopheles gambiae
  - b) Anopheles phenestus
  - c) Culex pipience
  - d) Aedes phigeli
4. The breeding or habitat of mosquitoes include
  - a) Muddy pools of water
  - b) Forest
  - c) Deserts
  - d) Beaches
5. Economic importances of mosquitoes includes the following except
  - a) Spread malaria
  - b) Spread viruses
  - c) Vectors of filarial worms
  - d) Spread HIV virus
6. The life cycle of mosquitoes have a complete metamorphosis (holometabolus). This means it has the following stages:
  - a) Egg ⇌ larvae – emargo
  - b) Egg ⇌ Pupae – D Larvae - emargo
  - c) Egg –larvae – pupae – emargo
  - d) Egg – emargo -Pupae – Larval
7. The habit of a vector to bite its host out doors is reffered to as
  - a) Endophagic
  - b) Endophillic
  - c) Exophilic

- d) Exophagic
8. When a vectors feeds on both man and animals are said to be:-  
a) Zoophilic  
b) Ferol-rural  
c) Sylvati – rural  
d) Anthropophilie
9. Simian malaria is a zoonotic infection of monkey and man. The species involved in this transmission are:-  
a) Plasmodium knowlesi  
b) Plasmodum falciparum  
c) Plasmodium malariae  
d) Plasmodium vivax
10. Arbuvirues causing yellow fever and dengue fever are transmitted by  
a) Anopheles Mosquitoes  
b) Culex mosquitoes  
c) Aedes mosquitoes  
d) Mansonia mosquitoes
11. Fusca groups of glossing species stay in large forest and are rarely feeds on man. Non of these species is a vector. These includes:  
a) Glossina longi pennis  
b) Glossina mositans  
c) Glossina tachnoides  
d) Glossina palidepes
12. Tsetsefly transmits :  
a) African Trypanosomiasis  
b) Leishmamiiasis  
c) Loiasis  
d) Kala-azar
13. Oncholercosis or River blindness is transmitted by a vector known as:  
a) Triatomine  
b) Phelobitotomus  
c) Simulium  
d) Mosquitoes
14. Sandfly is a vector of  
a) Yellow fever  
b) Dengue fever  
c) Trypanosomiasis  
d) Leishmaniasis
15. The type of leishmaniasis which can be found in Kenya is:-  
a) Visteral leishmaniasis  
b) Mucoculenous leishmamasis  
c) Cutaneous leishmaniasis

- d) None of the above
16. The following are economic importances of culicoides, which one is not:-
- Biting nuisance
  - Transmits microfilaria
  - Transmits viruses
  - They transmit malaria
17. Which one of the following is a characteristic of fleas
- The body is not chitinized
  - The fleas have short legs
  - They have no wings
  - They have a cylindrical body
18. The features that can identify fleas include
- Eyes, mesopleural rod, combs
  - Combs, head, Abdomen
  - Thorax, head, Abdomen
  - Rod, wings, combs
19. The human flea belongs to the following genera:
- Leptopsylla
  - Ctenocephalides
  - Nosopsylla
  - Tunga
20. Fleas are vectors of the following parasites acting as intermediate host except
- Hymenolepis diminuta
  - Hymenolepis nana
  - Dypilidium caninum
  - Hookworms
21. The lice which parasitize man are in the order:-
- Mallophaga
  - Phthiraptera
  - Anoplura
  - Cyclophaga
22. Hemimetabolous life cycle includes:-
- Egg, pupae, adult
  - Egg, larvae, adult
  - Egg, nymph, adult
  - Egg, pupae, larvae
23. The body louse is important in the transmission of:
- Pediculosis
  - Epidermic typhus
  - Relapsing fever

- d) Trench fever
24. The control of lice includes
- Plaiting of infested hair
  - Use of very rough combs
  - Wearing clean clothes
  - None of the above
25. The triatomine bugs can be differentiated by
- Head and eyes
  - Head and body
  - Thorax and abdomen
  - Proboscis and antennae
26. The germ louse has the following features except
- Has no combs
  - No mesophleural rod
  - It has no eyes
  - It has two wings
27. Ticks transmit relapsing fever to the following hosts except
- Man
  - Warthogs
  - Domestic pigs
  - Chicken
28. The head louse is called
- Pthirus pubis*
  - Pediculus humanus*
  - Pediculus capitis*
  - None of the above
29. Female simulation of black flies can lay how many eggs
- 10 – 50
  - 100-200
  - 50 – 100
  - 100 – 500
30. *Phlebotomus martini* found around Mt. Elgon transmits visceral leishmaniasis. The cutaneous leishmaniasis is transmitted by
- Phlebotomus longipes*
  - Phlebotomus pedefe*
  - Phlebotomus naidi*
  - Lutzomyia*
31. *Culex* mosquitoes are vector of:
- Arboviruses
  - Visceral leishmaniasis

- c) *Brugia malayi*
- d) Malaria

32. Ticks has the following genera:-

- a) *Boophilus*
- b) *Ixodes*
- c) *Anaplasma*
- d) *Babesia*

33. Female vectors normally takes blood from their hosts for

- a) Physical growth
- b) Chemical growth
- c) Ovulation
- d) For their own metabolic processes

34. The larvae of black fly excrete sticky substances for:-

- a) Protection
- b) Holding on surfaces / rocks
- c) For each attack to its hosts
- d) Development

35. *Culicoides* lay eggs ranging

- a) 10 – 15
- b) 15 – 65
- c) 30 – 130
- d) 100 – 300

36. Major characteristics of fleas include the following which one is not

- a) They are not true flies
- b) The body is highly chitinized
- c) The body have distinct neck between head and thorax
- d) They have long legs and very powerful for jumping

## SECTION B

1. Discuss the economic importance of mosquitoes **(20marks)**
  
2.
  - (a) Name any FIVE true flies you know. **(5marks)**
  - (b) Name any FIVE vectors which are not true flies **(5marks)**
  - (c)
    - (i) Give example and explain accidental vectors. **(3marks)**
    - (ii) Describe the general control measures of true flies **(7marks)**
  
3.
  - (a) With a well labelled diagram differentiate the (3) three genera reduviid bugs i.e  
Rhodnius, Triatoma and Panstrongylus **(12marks)**
  - (b) Describe the life cycle of reduviid bug **(8marks)**