



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

DMLS

AML2308 : VECTOR BIOLOGY

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2016

TIME: 2 HOURS

DATE: 10 Dec 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **TWO** Section(s). Attempt ALL questions.

Circle the correct answer in section A.

Q1 A biological vector is described as

- a) An organism that harbours a pathogen
- b) An arthropod
- c) An organism that harbours a pathogen and transmits the same
- d) An organism that harbours ,processes, and transmits the infective stage

Q2 Pathogens that are transmitted by sand fly include:

- a) Chagas parasite
- b) Leishmania
- c) Plague
- d) Borelia recurrentis

Q3 The subfamily of mosquito responsible for transmission of Plasmodium is

- a) Toxorynchitinae
- b) Anophilinae
- c) Hemagogus
- d) Culicinae

Q4 Bancroftian filariasis is a condition caused by a parasite transmitted by

- a) Culex mosquito
- b) Anopheles mosquito
- c) Hemagogus mosquito
- d) Exodid ticks

Q5 The vector for onchocerciasis is :

- a) Phlebotomus
- b) Anopheles gambiae
- c) Simulium damnosum
- d) Culicoides

Q6 White and black striped legs and abdomen is characteristic feature of:

- a) Aedes aegypti
- b) Asian tiger
- c) Anopheles gambiae
- d) Culex fatigans

Q7 Bulinus truncatus is associated with:

- a) Bilharzia
- b) Fasciolopsis
- c) Fasciola hepatica
- d) Schistosoma hematobium

Q8 Water surface modulation can be used for the control of the following mosquito larvae:

- a) Anopheles
- b) Aede
- c) Asian tiger
- d) Mansinia

Q9 The eggs which are laid in rafts on the surface of water are those of:

- a) Culex
- b) Aedes
- c) Anopheles
- d) Toxorynchite

Q10 The presence of a modified siphon that punches submerged plants for oxygen is characteristic feature for

- a) *Mansonia*
- b) *Culex*
- c) *Anopheles*
- d) *Toxorynchitinae*

Q11 The developmental stage of plasmodium ingested by the vector during a blood meal is:

- a) Sporozoite
- b) Gametocyte
- c) Ookinete
- d) Zygote

Q12 The egg fecundity of a female mosquito depends on:

- a) Availability of wild animals
- b) Presence of surface water
- c) Availability of rainfall
- d) Availability of fresh human blood

Q13 The vector which transmits a disease characterized by Roman's sign is

- a) *Phlebotomus*
- b) Triatomine bugs
- c) Tsetse fly
- d) Ticks

Q14 A blood fluke with a lateral spined egg is transmitted by

- a) *Biomphalaria alexandrina*
- b) *Bulinus truncatus*
- c) *Bulinus globosus*
- d) *Lymnaea stagnalis*

Q15 *Spirometra sparganum* is transmitted by which of the following vectors

- a) Fresh water fleas
- b) Frogs
- c) Snails
- d) Crabs

Q16 The geographical region for Trypanosomes in Africa is:

- a) Latitude 20° north to 15° South
- b) Latitude 20° north to 40° south
- c) Latitude 15° north to 30° south
- d) Latitude 30° north to 15° south

Q17 Culicoides are vectors of;

- a) Wuchereria bancrofti
- b) Brugia malayi
- c) Depeterlonema perstans
- d) Loa loa

Q18 The vectors which transmit liver flukes are

- a) Crabs
- b) Frogs
- c) Fish
- d) Snails

Q19 The larvae of tsetse fly can be diagnosed using the following features

- a) Polyneutic lobes and 4 segments
- b) Polyneutic lobes and 8 segments
- c) 2 polyneutic lobes and 12 segments
- d) 4 polyneutic lobes and 12 segments

Q20 Black fly is a vector of :

- a) Tape worm
- b) Strongyloides stercoralis
- c) Broad fish tape worm
- d) Loa loa

Q21 Onchomelania is a vector for which of the following Trematodes

- a) Fasciolopsis buski
- b) Schistosoma japonicum
- c) Schistosoma hemtobium
- d) Schistosoma mansoni

Q22 The primary vector for Schistosoma Heamatobium is:

- a) Bulinus globosus
- b) Onchomelania
- c) Lymnea stagnalis
- d) Bulinus africanus

Q23 The ecology of Simulium damnosum is

- a) Tropical rain forest
- b) Woodland savanna
- c) Marine forest
- d) Desert

Q24 The physical appearance, white banded legs and wing venation are those of:

- a) Toxorynchite
- b) Aedes aegypti
- c) Aedes albopictus
- d) Mansonia titilans

Q25 The mosquito with aggressive biting behavior is :

- a) Toxorynchite
- b) Aedes aegypti
- c) Anopheles gambiae
- d) Aedes albopictus

Q26 Which of the following mosquitoes is grouped as Anopheline

- a) Aedes aegypti
- b) Asian tiger
- c) Culex fatigans
- d) Bironella

Q27 The ecology of tsetse fly in Africa requires

- a) Woodland savanna
- b) Desert
- c) First flowing rivers
- d) Tropical rainforest

Q28 The following features are diagnostic for female Culex mosquito

- a) Non-plumos antennae and pulps as long as proboscis
- b) Non-plumos antennae and palps are clubbed
- c) Non plumos antennae and short palps
- d) Non-plumose antennae and palps as long as proboscis and are not clubbed.

Q29 The mosquito egge which are laid singly and have floats are those of

- a) Culex fatigans
- b) Aedes aegypti
- c) Anopheles gambiae
- d) Sorophora

Q30 The safe control of mature stag of the mosquito is

- a) Intrroduction of genetically modified larvae
- b) Use of mosquito net
- c) Use of pyrethroides
- d) Use of integrated control methods

Q31 The Anopheline mosquito breathes through

- a) Cuticle
- b) Nostrils
- c) Siphone
- d) Hair brushes

Q32 The salivary glands of culicine mosquito have

- a) One lobe
- b) Four lobes
- c) Tree lobes
- d) Three lobes with a short middle one

Q33 Loa loa is transmitted by

- a) House fly
- b) Tumbu fly
- c) Chrysops
- d) Sand flies

Q34 The vector for *Dracunculus medinensis* is

- a) Cattle
- b) Cats
- c) Cyclops
- d) Chrysops

Q35 The best method for the control of mosquito larvae is

- a) Mosquito net
- b) Modulation of the breeding places
- c) Use of insecticides
- d) Mosquito proof window-screens

Q36 Winter bottoms sign is a special manifestation of a condition caused by a protozoan parasite transmitted by:

- a) Tsetse fly
- b) Reduviid bugs
- c) Phlebotomus
- d) Black flies

Q37 The tsetse fly can be identified by the following features

- a) Bushy antennae
- b) A wing showing a hatchet cell
- c) Large compound eyes
- d) Cephalothorax

Q38 The genus of mosquito larvae that lies parallel to the surface of water is that of

- a) Sabethes
- b) Mansonella
- c) Anopheles
- d) Chagasia

Q39 The genus of mosquito which does not feed on human blood is

- a) Toxorhynchite
- b) Culex
- c) Anopheles
- d) Aedes

Q40 The larvae of lung fluke of the genus *Paragonimus* is encapsulated in one of the following vectors

- a) Fresh water fish
- b) Crabs
- c) Snails
- d) Ants

Section B

Q41 Briefly state the ecological set up of the following vectors

- a) *Bulinus globosus*-----5 marks
- b) *Phlebotomus* 5 marks
- c) *Lymnaea* 5 marks
- d) Tsetse fly 5 marks

Q42 List the pathogens which are transmitted by the following vectors-----20 marks

- a) Tsetse fly
- b) *Culex*
- c) Asian tiger
- d) *Anopheles*
- e) *Aedes*
- f) Ticks

Q43. Describe the ecology of a) tsetse flies (10 marks) and b) mosquitoes (10 marks)