



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN MEDICAL LABORATORY SCIENCES

AML2302 : HELMINTHOLOGYII

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2016

TIME: 2 HOURS

DATE: 5 Dec 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of Choose No Section(s). Attempt ALL questions.

Circle the correct answer in section A.

Section A

PAPER I

1. A diagnostic finding for *Taenia solium*
 - a) Cyst
 - b) gravid segment
 - c) larva in stool
 - d) Muscles

2. The rhabditiform larva of *Strongyloides stercoralis* can detected in
 - a) stool
 - b) sputum
 - c) urine
 - d) CSF

3. The laboratory diagnosis of *Trichuris trichiura* is made by finding

- a) barrel shape egg
- b) Larva
- c) Cyst
- d) Trophozoit
- e) sputum

4. *Taenia saginata* is

- a) beef tapeworm
- b) pork tapworm
- c) chicken tapworm
- d) fish tapworm

e) Fish tapeworm

5. Which of the following is not a control of *Trichuris trichiura* is by

- a) sanitary disposal of feses
- b) education
- c) treatment
- d) spraying

6. The egg of *Echinococcus granulosus* hatch to give

- a) oncospheres
- b) adult worm
- c) hydatid cyst
- d) Cysticercus Larva

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7. The infective stage of *Schistosoma*

- a) eggs
- b) larva
- c) cercaria
- d) Trophozoite
- e) metacercariae

8. The following are diagnostic features of *Strongyloides stercoralis* except

- a) epigastric pain
- b) eosinophilia
- c) mucus diarrhea
- d) Sweating

9. *Taenia solium* is belong to

- A) cestodes
- B) trematodes
- C) nematodes
- D) protozoa

10. All those organism belong to trematodes except

- a) *Schistosoma hematobium*
- b) *Ascaris lumbricoides*
- c) *Fasciolopsis buski*
- d) *Schistosoma mansoni*

11. A diagnostic finding for *Diphylobothrium latium*

- a) ovoid, operculated eggs in stool
- b) barrel shape egg
- c) Larva
- d) Cyst

12. The infective stage of *Enterobius vermicularis* is

- a) Egg
- b) Larva
- c) Cyst
- d) Trophozoit

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13. The infective stage of the Taenia worms is

- a) cysticercus larva
- b) Larva
- c) Cyst
- d) Trophozoit

14. The infective stage of the Schistosoma worms is

- a) cercariae
- b) Larva
- c) Cyst
- d) Trophozoit

15. To collect feces from patient infected with *Enterobius vermicularis* we used

- a) Scotch tape
- b) Larva
- c) Cyst
- d) Trophozoit

16. The incorrect match between organism and the appropriate diagnostic procedure is:
- Onchocerca volvulus* - examination of skin snips
 - Cryptosporidium* - modified acid fast stain
 - Echinococcus granulosus* - routine ova and parasite examination
 - Schistosoma haematobium* -- examination of urine sediment
17. Charcot-Leyden crystals in stool may be associated with an immune response and are thought to be the breakdown products of:
- neutrophils
 - eosinophils
 - monocytes
 - lymphocytes
18. Morphological characteristics of the rhabditiform (non-infective) larvae of *Strongyloides stercoralis* are:
- a short buccal capsule and large genital primordium
 - a long buccal capsule and pointed tail
 - a short buccal capsule and small genital primordium
 - a small genital primordium and notch in tail
19. Visceral and ocular larva migrans are associated with which of the following organisms and diagnostic test?
- Toxocara* - serology
 - Onchocerca* - skin snips
 - Dracunculus* - skin biopsy
 - Angiostrongylus* - CSF examination
20. The following organisms are linked with specific, relevant information.
The incorrect combination is:
- Strongyloides stercoralis* - internal autoinfection
 - Echinococcus granulosus* - hydatid disease
 - Taenia solium* – human can serve as definitive and intermediate hosts

d. *Schistosoma mansoni* - common within the United States

21. Examination of a 24 hour unpreserved urine specimen is sometimes helpful in the recovery of:

a. *Trichomonas vaginalis* trophozoites

b. *Schistosoma haematobium* eggs

c. *Enterobius vermicularis* eggs

d. *Strongyloides stercoralis* larvae

22. The examination of sputum and stool may be necessary to diagnose infection with:

a. *Paragonimus westermani*

b. *Trichinella spiralis*

c. *Wuchereria bancrofti*

d. *Fasciola hepatica*

23. Two helminth eggs that may resemble one another are:

a. *Diphyllobothrium latum* and *Paragonimus westermani*

b. *Opisthorchis sinensis* and *Fasciolopsis buski*

c. *Taenia saginata* and *Hymenolepis nana*

d. *Ascaris lumbricoides* and *Trichostrongylus*

24. Eating poorly cooked pork can lead to an infection with:

a. *Taenia solium* and *Trichinella spiralis*

b. *Taenia saginata* and *Hymenolepis nana*

c. *Trichuris trichiura* and *Hymenolepis diminuta*

d. *Diphyllobothrium latum* and *Ascaris lumbricoides*

25. An operculated cestode egg that can be recovered in human feces is:

a. *Clonorchis sinensis*

b. *Diphyllobothrium latum*

c. *Paragonimus westermani*

d. *Dipylidium caninum*

26. The adult tapeworm of *Echinococcus granulosus* is found in the intestine of:

- a. Humans
- b. Sheep
- c. Dogs
- d. Cattle

27. In infections with *Taenia solium*, man can serve as the:

- a. definitive host
- b. intermediate host
- c. definitive and/or the intermediate host
- d. Paratenic

28. Humans acquire infections with *Diphyllobothrium latum* adult worms by:

- a. ingestion of fresh water crabs
- b. skin penetration of cercariae
- c. ingestion of water chestnuts
- d. ingestion of infected raw fresh water fish
- e. inhalation

29. Humans can serve as both the intermediate and definitive host in infections caused by:

- a. *Enterobius vermicularis*
- b. *Hymenolepis nana*
- c. *Schistosoma japonicum*
- d. *Ascaris lumbricoides*

30. Organisms (and infections) that under normal conditions could not be transmitted in the laboratory are:

- a. *Hymenolepis nana* – dwarf tapeworm disease
- b. *Taenia solium* - cysticercosis
- c. *Ascaris lumbricoides* - ascariasis
- d. *Enterobius vermicularis* - pinworm infection

31. Which microfilariae are usually not found circulating in the peripheral blood?

- a. *Brugia malayi*
- b. *Loa loa*
- c. *Wuchereria bancrofti*
- d. *Onchocerca volvulus*

32. The miracidial hatching test helps to demonstrate the viability of:

- a. eggs of *Taenia* species.
- b. eggs of *Schistosoma* species.
- c. eggs of hookworm species.
- d. eggs of *Opisthorchis*.

33. The incorrect match between organism and characteristic is:

- a. *Fasciola hepatica* and liver infection
- b. *Trichuris trichiura* and eggs with polar plugs
- c. *Echinococcus granulosus* and daughter cysts
- d. *Schistosoma mansoni* and egg with terminal spine

34. An immunosuppressed male had several episodes of pneumonia, intestinal pain, and sepsis with Gram negative rods, the organism is:

- a. *Fasciolopsis buski*
- b. *Strongyloides stercoralis*
- c. Hookworm
- d. *Paragonimus westermani*

35. When humans have cystic hydatid disease, the causative agent and host classification are:

- a. *Echinococcus granulosus* - accidental intermediate host.
- b. *Echinococcus granulosus* - definitive host.
- c. *Taenia solium* - accidental intermediate host.
- d. *Taenia solium* - definitive host.

36. A 45 year old man developed fever, myalgia, and periorbital edema. He has a history of deer meat consumption. The most likely causative agent is:

- a. *Toxoplasma gondii*
- b. *Taenia solium*
- c. *Hymenolepis nana*
- d. *Trichinella spiralis*

37. Which of the following is true about onchocerciasis?

- a. The adult worm is present in the blood.
- b. The microfilariae are in the blood during the late evening hours.
- c. The diagnostic test of choice is the skin snip.
- d. The parasite resides in the deep lymphatics.

38. A helminth egg is described as having terminal polar plugs. The most likely helminth would be:

- a. Hookworm
- b. *Trichuris trichiura*
- c. *Fasciola hepatica*
- d. *Dipylidium caninum*

39. Ingestion of the following will result in human infection:

- a. Egg of *Strongyloides stercoralis*
- b. Egg of *Schistosoma japonicum*
- c. Egg of *Toxocara canis*
- d. Egg of *Opisthorchis sinensis*

40. A helminth egg having a thick radially striated shell and the shell contains a six-hooked embryo called the oncosphere. This egg is:

- a. Hookworm
- b. *Schistosoma* spp.
- c. *Strongyloides stercoralis*
- d. *Taenia* spp.

Section B 60 Marks

Section B Answer all questions

1. Discuss the paragonimiasis infection in man (20 marks)
2. a).Outline the lifecycle of *Clonorchis sinensis* (10 marks)
b). Describe the effect of *Heterophyes heterophyes* on humans? (10 marks)
3. a).Outline the pathogenesis of *Taenia solium*? (10 marks)
b) Describe in detail one of the serological method in aid of Platyhelminthes diagnosis? (10 marks)

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