



**TECHNICAL UNIVERSITY OF MOMBASA**

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**FACULTY OF APPLIED AND HEALTH SCIENCES**

**DEPARTMENT OF MEDICAL SCIENCES**

**UNIVERSITY EXAMINATION FOR:**

**DIPLOMA IN MEDICAL LABORATORY SCIENCES**

**AML2302 : HELMINTHOLOGY II**

**SPECIAL/ SUPPLIMENTARY EXAMINATIONS**

**SERIES: SEPTEMBER 2018**

**TIME: 2 HOURS**

**DATE:** Pick Date Sep 2018

**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.**

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Section A

1. A freshwater snail is always a part of the life cycle in which of the following groups?
  - a. Cestodes
  - b. Trematodes
  - c. Filarial worms
  - d. Intestinal nematodes
2. Mature infectious eggs are ingested from the soil, which of the following parasites might be seen in the same patient at the same time?
  - a. Hookworm and *Ascaris lumbricoides*
  - b. *Ascaris lumbricoides* and *Trichuris trichiura*
  - c. *Trichuris trichiura* and *Schistosoma japonicum*
  - d. *Schistosoma japonicum* and Hookworm
3. Which of the following helminth eggs would not float using the zinc sulfate flotation concentration method?
  - a. *Paragonimus* spp. and *Diphyllobothrium latum*

- b. *Opisthorchis sinensis* and *Taenia* spp.
- c. *Fasciola hepatica* and *Hymenolepis nana*
- d. Unfertilized *Ascaris lumbricoides* and *Trichuris trichiura*

4. What is the intermediate host for the schistosomes?

- a. Raw sewage
- b. Blood-sucking insects
- c. Snails
- d. Soil

5. Which one of the following is diagnosed by muscle biopsy?

- a. *Trichinella spiralis*
- b. *Ascaris lumbricoides*
- c. *Strongyloides stercoralis*
- d. *Cryptosporidium parvum*

6. A host that harbors the asexual stage of a parasite is known

- a. Definitive host
- b. Intermediate host
- c. Reservoir host
- e. Facultative

7. Produces Ground itch to man.

- a. *Trichuris trichiura*
- b. *Necator americanus*
- c. *Enterobius vermicularis*
- d. *Ascaris lumbricoides*

8. Which of the following drugs would be the best choice for the treatment of a *Schistosoma haematobium* infection in man?

- a. Albendazole
- b. Fenbendazole
- c. Eprinomectin
- d. Praziquantel

9. Which one of the following is not a cutaneous larva migrans?

- a. *Toxocara cati*
- b. *Ancylostoma braziliense*
- c. *Ancylostoma caninum*
- d. *Uncinaria stenocephala*

10. Very high eosinophilia is associated with which of the following

- a. Trichinosis
- b. Onchocerciasis
- c. Hydatid disease
- d. Ascariasis

11. Which is the most common cause of Creeping Eruption or Cutaneous Larva Migrans.

- a. Trichinosis
- b. Onchocerciasis
- c. Hydatid disease
- d. *Ancylostoma braziliense*

12. Which of the following parasite may produce Loeffler's syndrome to man

- a. *Trichuris trichiura*
- b. *D. latum*
- c. *Gnathostoma spinigerum*
- d. *Ascaris lumbricoides*

13. The adult worm of *Clonorchis sinensis* is most frequently found in the following

- a. Intrahepatic bile duct
- b. Lung parenchyma
- c. Urinary bladder submucosa
- d. Lumen of intestine

14. The size of ova of *Trichuris trichiura* is approximately

- a. 70 x 30 um
- b. 60 x 40 um
- c. 50 x 22 um
- d. 60 x 38 um

15. Which one of the following is not a cestode

- a. *Diphyllobothrium*
- b. *Hymenolepis*
- c. *Schistosoma*
- d. *Taenia*

16. *Diphyllobothrium latum* is associated with

- a. Cat
- b. Fish
- c. Pig
- d. Dog

17. Lateral uterine branches in gravid proglottid are counted for diagnosis of infection caused by the following

- a. *Diphyllobothrium latum*
- b. *Dipylidium caninum*
- c. *Taenia saginata*
- d. *Hymenolepis nana*

18. Bothriocephalus anemia is associated with

- a. microcytic hypochromic cells
- b. Folate deficiency
- c. iron deficiency anemia
- d. pernicious anemia

19. The normal lifecycle of *Strongyloides stercoralis* is approximately

- a. 2 years
- b. 5 years
- c. 12 years
- d. 30 years

20. Which of the following can infect the central nervous system?

- a. *Taenia solium*
- b. *Toxoplasma gondii*
- c. *Echinococcus sp*
- d. *Taenia saginata*

17. Eosinophils kills the parasite by the following

- a). Production of antibodies
- b). Intracellular digestion
- c). Extra cellular killing
- d). Activation of mononuclear cells

18. Obstructive uropathy is associated with

- a). *Schistosoma haematobium*

- b). *Schistosoma japonicum*
- c). *Schistosoma mansoni*
- d). *Schistosoma mekongi*

19. Pipe-stem fibrosis of the liver in Schistosomiasis is due to what stage of the parasite?

- a). Adult
- b). Juvenile
- c). eggs
- d). Cercaria

20. Which of the following has been associated with Schistosomes?

- a). Carcinoma of urinary bladder
- b). Carcinoma of liver
- c). Carcinoma of small intestine
- d). Carcinoma of lungs

21. Adult worms of the following are found in subcutaneous nodules

- a. *Loa loa*
- b. *Dracunculus medinensis*
- c. *Onchocerca volvulus*
- d. *Brugia malayi*

22. The eggs of the following *Schistosoma* sp are elongate and have a prominent terminal spine are

- a. *S. mansoni*
- b. *S. japonicum*
- c. *S. haematobium*
- d. *S. intercalatum*

23. Snails are both the first and second intermediate hosts of the following trematodes

- a. *Echinostoma ilocanum*
- b. *Fasciola hepatica*

c. *Paragonimus westermani*

d. *Fasciola hepatica*

24. The infective stage of the following parasite is found in crabs or crayfishes.

a. *Echinostoma ilocanum*

b. *Clonorchis sinensis*

c. *Opisthorchis felinus*

d. *Paragonimus westermani*

25. What parasite has an egg that is plano-convex and is readily infective after discharge?

a). *Toxocara canis*

b). *Trichuris trichiura*

c). *Ancylostoma duodenale*

d). *Toxocara cati*

26. Which one of the following is diagnosed by urine microscopy?

a). *Ascaris lumbricoides*

b). *Strongyloides stercoralis*

c). *Cryptosporidium parvum*

d) *Schistosoma haematobium*

27. A host that harbors the sexual stage of a parasite is known

a). Definitive host

b). Intermediate host

c). Reservoir host

d). Facultative

28. Produces Ground itch to man.

a). *Trichuris trichiura*

b). *Necator americanus*

c). *Enterobius vermicularis*

d). *Ascaris lumbricoides*

29. Which of the following drugs would be the best choice for the treatment of a *Schistosoma mansoni* infection in man?

a. Albendazole

b. Fenbendazole

c. Eprinomectin

d Praziquantel

30. What is the specimen of choice to recover *Paragonimus westermani*?

a). Stool

b). Blood

c). Sputum

d). Urine

31. What Cestode has an operculated egg similar to the Trematodes?

a). *Diphyllobothrium latum*

b). *Echinococcus granulosus*

c). *Paragonimus westermani*

d). *Taenia* species

32. Katayama syndrome may be caused by

a). *Schistosoma mansoni*

b). *Ascaris lumbricoides*

c). *Taenia*

d). *Enterobius vermicularis*

33. Snails serve as intermediate hosts of which of the following parasites?

(a) *Enterobius vermicularis*

(b) *Echinococcus granulosus*

(c) *Schistosoma mansoni*

(d) *Wuchereria bancroft*

34. Humans can serve as the *intermediate* host of which of the following parasites?

(a) *Taenia solium*

(b) *Taenia saginata*

(c) *Echinococcus multilocularis*

(d) *Spirometra spp.*

35. Which of the following parasites are diagnosed by muscle biopsy?

(a) *Ancylostoma duodenale*

(b) *Trichuris trichiura*

(c) *Trichinella spiralis*

(d) *Strongylodes stercoralis*

36. The following statements concerning hookworm infection are correct except

(a) Hookworm infection can cause pneumonia

(b) Hookworm infection is acquired by active penetration

(c) Diagnosed by finding the trophozoite in the stool

(d) Hookworm infection is caused by *Necator americanus*

37. Pigs or dogs are the source of human infection by each of the following parasites except:

(a) *Ascaris lumbricoides*

(b) *Trichinella spiralis*

(c) *Ascaris suum*

(d) *Echinococcus granulosus*



38. Which of the following parasites are diagnosed by use of xenodiagnosis?

- (a) *Strongyloides stercoralis*
- (b) *Shistosoma mansoni*
- (c) *Trichinella spiralis*
- (d) *Ascaris lumbricoides*

39. One of the following parasites has more than two host to complete its lifecycle

- (a) *Ascaris lumbricoides*
- (b) *Enterobius vermicularis*
- (c) *Trichuris trichiura*
- (d) *Paragonimus westermani*

40. How is the intermediate flea host of *Dipylidium caninum* infected?

- (a). Hatched larvae penetrate through the adult flea exoskeleton
- (b.) Hatched larvae penetrate through the larval flea exoskeleton
- (c). Hatched larvae are engested by the adult flea
- (d). Eggs still within their gravid proglottids are engested by larval fleas

#### Section B 60 Marks

#### Section B Answer all questions

1. Discuss the hermaphroditic flukes giving examples (20 marks)
2. a). Classify *Taenia saginata* parasites (10 marks)  
b). Describe the effect of *Clonorchis sinensis* on humans? (10 marks)
3. a). Outline the lifecycle of *Fasciola hepatica*? (10 marks)  
b) Describe compliment fixation test in aid of Helminthes diagnosis? (10 marks)