



KENYATTA UNIVERSITY
EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN
MEDICAL LABORATORY SCIENCE

HML 315: MEDICAL HELMINTHOLOGY

1ST SEMESTER, 2022/2023

TIME: 2 Hours

SECTION A: ANSWER ALL QUESTIONS (4 MARKS EACH)

- 1a. List FOUR *Schistosoma* species that can be found in faeces (2 marks)
- 1b. List TWO morphological characteristics of the eggs of *S. haematobium* as seen under a light microscope. (2 marks)
- 2a. List TWO morphological characteristics that distinguish cestodes from trematodes. (2 marks)
- 2b. List any TWO methods that can be used in the laboratory diagnosis of lymphatic filariasis. (2 marks)
3. State FOUR prevention and control measures against Trichuriasis infection. (4 marks)
4. Outline the procedure for the laboratory diagnosis of *Dracunculus medinensis* infection in humans. (4 marks)
5. Describe the lifecycle of hookworms. (4 marks)

SECTION B: ANSWER ANY ONE QUESTION (20 MARKS EACH)

- 6 a. Describe *Ascaris lumbricoides* infection in humans under the following headings:
 - i. Clinical manifestation of the infection. (5 marks)
 - ii. Prevention and Control Measures (5 marks)
- b. Describe the life cycle of *Taenia saginata*. (10 marks)
- 7 a. Describe *Enterobius vermicularis* infection in humans under the following headings:
 - i. Clinical manifestation of the infection. (5 Marks)
 - ii. Laboratory diagnosis of *Enterobius vermicularis* (5 Marks)
- b. Describe the lifecycle of *Paragonimus* flukes. (10 marks)

SECTION C: ANSWER ALL QUESTION BY INDICATING THE CORRECT CHOICE
ON THE ANSWER BOOKLET PROVIDED. EACH QUESTION IS 1/2 MARK

1. Each of the following statements concerning hookworm infection is **correct except**?
 - a) Hookworm infection can cause pneumonia
 - b) Hookworm infection is acquired by humans when filariform larvae penetrate the skin
 - c) Hookworm infection is caused by *Necator americanus*
 - d) Hookworm infection can be diagnosed by finding the trophozoite in the stool
2. Which of the following is not true regarding intestinal nematodes of man?
 - a) *Enterobius vermicularis* is not a soil-transmitted helminth
 - b) *Strongyloides stercoralis* is the smallest intestinal nematode
 - c) *Trichinella spiralis* is oviparous
 - d) *Trichuris trichiura* has a similar mode of transmission as *Ascaris lumbricoides*
3. Which of the following is not true regarding *Brugia malayi*?
 - a) It causes lymphatic filariasis
 - b) Its microfilaria has two terminal nuclei
 - c) Its microfilaria shows periodicity phenomenon
 - d) Microfilariae is the infective stage to human
4. Microfilariae of all the following filarial worm show nocturnal periodicity except?
 - a) *Loa loa*
 - b) *Brugia timori*
 - c) *Brugia malayi*
 - d) *Wuchereria bancrofti*
5. Which of the following parasite does not undergo lung migration phase in its life cycle?
 - a) *Ascaris lumbricoides*
 - b) Hookworm
 - c) *Trichuris trichiura*
 - d) *Strongyloides stercoralis*
6. Which of the following is not true regarding *Wuchereria bancrofti*?
 - a) It is transmitted to human via mosquito
 - b) Its clinical manifestations are caused by microfilaria
 - c) The adult stage is found in the lymph nodes
 - d) Its infection can be diagnosed via blood examination

- a) It is found in the lumen of the small intestine
 - b) It lays infective eggs which are passed out in the stool
 - c) It is transmitted via faecal oral route
 - d) Adults can cause ectopic migration
8. All the following parasites causes lymphatic filariasis except?
- a) *Brugia timori*
 - b) *Onchocerca volvulus*
 - c) *Brugia malayi*
 - d) *Wuchereria bancrofti*
9. Which of the following parasite does not cause malabsorption syndrome?
- a) *Giardia lamblia*
 - b) *Cryptosporidium parvum*
 - c) *Strongyloides stercoralis*
 - d) *Trichuris trichiura*
10. Which of the following is a clinical feature of late lymphatic filariasis?
- a) Haemoptysis
 - b) Haematemesis
 - c) Hydrocele
 - d) Haematuria
11. Each of the following parasites is transmitted by flies EXCEPT?
- a) *Schistosoma mansoni*
 - b) *Trypanosoma gambiense*
 - c) *Onchocerca volvulus*
 - d) *Loa loa*
12. Each of the following statements concerning *Schistosoma haematobium* is correct EXCEPT?
- a) *S. haematobium* eggs have no spine.
 - b) *S. haematobium* infection predisposes to bladder carcinoma.
 - c) Snails are intermediate hosts of *S. haematobium*.
 - d) *S. haematobium* is acquired by humans when cercariae penetrate the skin.
13. Four weeks after his arrival from Africa, a 24-year-old graduate student presents with blood in his urine. Microscopic examination of his urine reveals the presence of eggs with terminal spines. In the interview he admits that he has been working on his family's rice field occasionally since his early childhood. The most likely etiologic agent of his complaint is?
- a) *Schistosoma mansoni*
 - b) *Fasciolopsis buski*
 - c) *Schistosoma haematobium*
 - d) *Schistosoma japonicum*

14. 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*
15. 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
16. An immunosuppressed male had several episodes of pneumonia, intestinal pain, and sepsis with Gram negative rods, and a history of military service in Southeast Asia 20 years earlier. The organism is?
- a) *Fasciolopsis buski*
 - b) *Strongyloides stercoralis*
 - c) Hookworm
 - d) *Paragonimus westermani*
17. 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.
18. What are the two major forms of schistosomiasis?
- a) Urinary and Rectal
 - b) Kidneys and Intestinal
 - c) Intestinal and Liver
 - d) Intestinal and Urinary
19. How long does it take for the schistosome to enter the body?
- a) 5 to 10 min
 - b) 10 to 30 min.
 - c) 30 to 60 seconds
 - d) 3 to 6 days
20. Human is a definitive host for all the following tapeworms except?
- a) *Taenia solium*
 - b) *Hymenolepis nana*
 - c) *Diphyllobothrium latum*
 - d) *Echinococcus granulosus*