



UNIVERSITI KUALA LUMPUR
INSTITUTE OF MEDICAL SCIENCE TECHNOLOGY

FINAL EXAMINATION
MARCH 2025 SEMESTER

COURSE CODE : HDB20903
COURSE TITLE : MEDICAL PARASITOLOGY AND ENTOMOLOGY
PROGRAMME NAME : BACHELOR OF BIOMEDICAL SCIENCE (HONOURS)
DATE : 03 JULY 2025
TIME : 9:00AM - 12:00PM
DURATION : 3 HOURS



INSTRUCTIONS TO CANDIDATES

1. Please read the instructions given in the question paper CAREFULLY.
2. This question paper is printed on both sides of the paper.
3. This question paper consist of TWO sections.
4. Answer ALL questions for Section A.
5. Section B consist of four questions. Answer THREE (3) questions only.
6. Please write your answer on the answer booklet provided.
7. Please answer all questions in English only.
8. Please answer MCQ/EMQ questions using OMR sheet. *Tick if applicable*
9. Refer to the attached Formula/ Appendies. *Tick if applicable*

THERE ARE 14 PAGES OF QUESTIONS INCLUDING THIS PAGE

SECTION A (Total: 40 marks)

Answer ALL questions.

Please use the answer booklet provided.

1. Entero-Test or known as String test is a simple and convenient method of sampling duodenal contents. Which of the following parasites most likely to be found via Entero-Test method?
 - A. *Giardia lamblia* trophozoites
 - B. Fertilized egg of *Ascaris* spp.
 - C. Fertilized egg of *Ascaris* spp.
 - D. Hookworms trophozoites

2. Despite advances in modern medicine, human seems to be vulnerable to parasitic diseases. This is because of _____.
 - A. weaker immune system in older people
 - B. lack of awareness in human on parasitic disease
 - C. increasing drug resistance in parasites
 - D. increased lifespan of mosquitoes

3. Which of the following is a common mode of transmission for *Ascaris lumbricoides* (human roundworm)?
 - A. Fecal-oral route
 - B. Direct skin contact
 - C. Mosquito bite
 - D. Inhalation of spores

4. Which of the following environmental changes increases the spread of vector-borne diseases?
- A. building large homes where there used to be small homes
 - B. rapid development of urban areas
 - C. change in animal migration patterns
 - D. reforestation
5. Infection results from larval penetration of the skin on contact with contaminated soil. The statement above best describes _____.
- A. Hookworm
 - B. Tapeworm
 - C. Flatworm
 - D. Roundworm
6. Parasites that have a joined, chitinous exoskeleton with segmented bodies and joined appendages would be classified as _____.
- A. cestodes
 - B. protist
 - C. arthropods
 - D. nematodes
7. Which of the following arthropods spreads African sleeping sickness?
- A. Black flies
 - B. Mango flies
 - C. Tsetse flies
 - D. Sandflies

8. Which of the following techniques is the best to quantify helminth eggs?
- A. McMaster technique
 - B. Sedimentation technique
 - C. Stoll's technique
 - D. Direct smear technique
9. Which of the following is a common symptom of schistosomiasis?
- A. Coughing
 - B. Jaundice
 - C. Hematuria
 - D. Diarrhea
10. Which parasite causes trichomoniasis in humans?
- A. *Toxoplasma gondii*
 - B. *Leishmania tropica*
 - C. *Plasmodium falciparum*
 - D. *Trichomonas vaginalis*
11. An a Orang Asli child with high burden of helminth was admitted to a general hospital. Which method could be used to collect her worm sample?
- A. Collect her stool sample minimum 3 times.
 - B. Collect the worm/worm segment in a separate container.
 - C. Immediately store her stool sample in refrigerator.
 - D. Use a preservative while collecting her stool specimen.

12. The most common site of infection in men by *Trichomonas vaginalis* is _____.
- A. bladder
 - B. urethra
 - C. prostate
 - D. seminal vesicle
13. The primary species of mites that causes human itch/scabies disease is _____.
- A. *Demodex* spp.
 - B. *Laelaps nutalli*
 - C. *Sarcoptes scabiei*
 - D. *Ornithonyssus scabiei*
14. Which of the following is the causative agent of cysticercosis?
- A. *Taenia solium*
 - B. *Sarcocystis hominis*
 - C. *Schistosoma mansoni*
 - D. *Trichinella spiralis*
15. Which is the intermediate host in indirect life cycle of *Hymenolepis nana*?
- A. Rat flea
 - B. Body louse
 - C. House fly
 - D. Head louse

16. Which stage of malaria are transmitted to *Anopheles* mosquito?
- A. Trophozoite stage
 - B. Schizont stage
 - C. Ring stage
 - D. Gametocytes stage
17. A 6-year-old child is diagnosed with intestinal ascariasis after presenting with abdominal pain, vomiting, and weight loss. Which of the following would be the most appropriate treatment for this child?
- A. Ivermectin
 - B. Praziquantel
 - C. Mebendazole
 - D. Artemisinin-based combination therapy
18. A 45-year-old man presents with unexplained diarrhea, weight loss, and abdominal cramping. Stool microscopy reveals the presence of *Giardia lamblia* cysts. Which of the following would be the most likely consequence of *Giardia* infection in the patient's small intestine?
- A. Hypersecretion of bile into the intestine causing steatorrhea
 - B. Increased production of gastric acid leading to ulcer formation
 - C. Malabsorption, particularly of fats, due to epithelial damage
 - D. Increased absorption of nutrients due to increased villous hypertrophy
19. Which stage of malaria are transmitted to *Anopheles* mosquito?
- A. Ring stage
 - B. Schizont stage
 - C. Trophozoite stage
 - D. Gametocytes stage

20. A retractable, conelike structure that is located on the anterior end of the scolex, and in some species is armed with hooks. Which of the following part of the cestodes indicated in the statement above?
- A. Rostellum
 - B. Acetabulum
 - C. Sucker
 - D. Bothria
21. Which of the following causes kala-azar?
- A. *Entamoeba histolytica*
 - B. *Trypanosoma cruzi*
 - C. *Leishmania donovani*
 - D. *Plasmodium vivax*
22. Which of the following is a cestode?
- A. *Schistosoma haematobium*
 - B. *Taenia solium*
 - C. *Trichuris trichiura*
 - D. *Ancylostoma duodenale*
23. The diagnostic stage of *Entamoeba histolytica* in stool is _____.
- A. Cyst only
 - B. Cyst and trophozoite
 - C. Trophozoite only
 - D. Sporulated oocyst

24. The adult form of *Schistosoma haematobium* resides in _____.
- A. Intestinal veins
 - B. Urinary bladder veins
 - C. Lung capillaries
 - D. Liver parenchyma
25. What is the main component of One Health?
- A. Human health, animal health, and the environment
 - B. Human health, animal health, and the climate
 - C. Human health, animal health, and the weather
 - D. Human health, animal welfare, and the environment
26. A patient returns from Africa with intermittent fever every 48 hours. Which diagnostic test would you order first?
- A. Stool microscopy
 - B. Thick and thin blood smear
 - C. Widal test
 - D. Urine culture
27. Which of the following is an health issue related to parasitology?
- A. Neglected tropical diseases
 - B. Chronic illnesses
 - C. Mental health disorders
 - D. Common non-communicable diseases

28. A distinguishing feature of *Taenia solium* is _____.
- A. Pig as intermediate host
 - B. Causes hydatid cyst
 - C. Absence of hooks on scolex
 - D. Dog as final host
29. What is the best way to prevent lymphatic filariasis?
- A. Avoid eating the under cooked meat.
 - B. Frequent handwashing.
 - C. Refrain from swimming.
 - D. Avoid mosquito bites.
30. A 5-year-old boy was attacked by a large swarm of honey bees primarily on his head, trunk, and the upper limbs. The child was rescued and transferred to the hospital where he was intubated in the ICU. The most probable diagnosis is _____.
- A. local inflammatory reactions
 - B. severe hemorrhage
 - C. painful rash
 - D. anaphylactic shock
31. Which of the following would be the best prophylaxis to control malaria nearby a rural school area?
- A. Spraying residual insecticides.
 - B. Burning the breeding sites.
 - C. Provide bed nets impregnated with pyrethroids.
 - D. Spraying breeding site with petroleum.

32. What is the unique feature of strongyloidiasis?
- A. The ability of the parasite to autoinfect the host.
 - B. It is preventable by eating cooked meat.
 - C. Difficult to detect and can be underestimated.
 - D. Require several intermediate hosts to complete the life cycle.
33. Name the species of the rhabditid nematode (roundworm) which is the major causative agent of strongyloidiasis in humans.
- A. *Strongyloides westeri*
 - B. *Strongyloides stercoralis*
 - C. *Strongyloides myopotami*
 - D. *Strongyloides fuelleborni*
34. Which of these group of people are considered a high-risk group for toxocariasis?
- A. Engineers
 - B. Teachers
 - C. Farmers
 - D. Owners of dogs and cats
35. Adult worms' nest in the lymphatic vessels and disrupt the normal function of the lymphatic system. The worms can live for approximately 6–8 years and, during their lifetime, produce millions of microfilariae (immature larvae) that circulate in the blood. The statement above best describes parasite _____.
- A. *Trichinella spiralis*
 - B. *Wuchereria bancrofti*
 - C. *Schistosoma mansoni*
 - D. *Loa loa*

36. Two intermediate hosts are essential to complete the life cycle of _____.
- A. Trematodes
 - B. Cestodes
 - C. Nematodes
 - D. Arthropods
37. _____ is transmitted by cats.
- A. *Echinococcus granulosus*
 - B. *Toxocara canis*
 - C. *Toxoplasma gondii*
 - D. *Balantidium coli*
38. Which of the *Plasmodium* species has band form morphology during late trophozoite stage?
- A. *Plasmodium vivax*
 - B. *Plasmodium falciparum*
 - C. *Plasmodium ovale*
 - D. *Plasmodium malariae*
39. 20-year-old patient with recent history of swimming developed severe headache, vomiting, and ended in coma. The CSF examination revealed motile amoeba. Which of the following amoebas is the most likely causal agent?
- A. *Acanthamoeba culbertsoni*
 - B. *Naegleria fowleri*
 - C. *Entamoeba histolytica*
 - D. *Iodamoeba butschlii*

40. Which of the following characteristic features best describes sporozoan parasites?
- A. Has an alternation of asexual and sexual phases in their life cycle
 - B. Equipped with a flagellum at the anterior end
 - C. The entire parasite is covered with short bristles
 - D. The morphology is pear-shaped

SECTION B (Total: 60 marks)

Answer **THREE (3)** questions only.

Please use the answer booklet provided.

Question 1

Arthropods can cause various infection to human and it is important to accurately identify and classify them for crucial treatment, prevention, and control of infection.

- i. Suggest five medically important arthropods and disease caused by them.
(10 marks)

- ii. Suggest five vector control measures.
(10 marks)

Question 2

GIP (Gastrointestinal Parasites) refer to a broad category of parasites that inhabit the digestive tract of humans and other animals.

- i. Suggest five gastrointestinal parasites that commonly infect humans.
(5 marks)

- ii. Explain the step-by-step protocol for the Formalin-Ethyl Acetate Sedimentation Concentration method for stool sample analysis?
(15 marks)

Question 3

Mr. X presented to the outpatient department with complaints of fever, right upper abdominal pain, and nausea for the past 5 days. Based on the clinical findings, ultrasound findings, positive serology, and aspiration results, the diagnosis of Amoebic Liver Abscess (ALA) was confirmed.

- i. Based on the clinical findings, suggested five species of the same parasite group that may causes illness to human.

(5 marks)

- ii. With an aid of a diagram, explain the life cycle of the parasite which caused Amoebic Liver Abscess (ALA).

(15 marks)

Question 4

Answer all questions.

- i. Suggest five biological specimens commonly used for parasite detection, along with the specific parasites that can typically be identified in each of these samples.

(10 marks)

- ii. Define the Bristol Stool Chart and explain the seven different stool types it categorizes.

(10 marks)

END OF EXAMINATION PAPER

