

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE  
OF BACHELOR OF SCIENCE IN NURSING

NURU 178: MEDICAL PARASITOLOGY

STREAMS: BSC (NURU) UPGRADING (Y1T2)

TIME: 2 HOURS

DAY/DATE: FRIDAY 07/12/2018

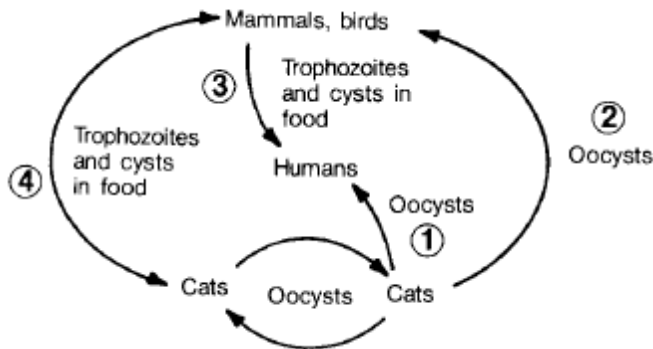
8.30 A.M. – 10.30 A.M.

INSTRUCTIONS:

- Do not write anything on the question paper
- Mobile phones and any other reference materials are NOT allowed in the examination room
- The paper has three sections. Answer ALL questions
- Number ALL your answers and indicate the order of appearance in the space provided in the cover page of the examination answer booklet

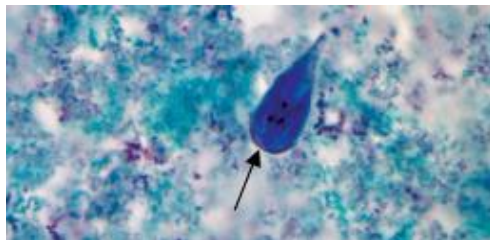
PART I: 20 MARKS

1. In order to exert control over the primary cause of toxoplasmosis of pregnancy, which one of the following steps of the life cycle of *Toxoplasma* would be most practical to interrupt?



- Step 1
- Step 2
- Step 3
- Step 4

2. The diagnostic characteristics of *Plasmodium falciparum* are best described by which one of the following statements?
  - a. A period of 72 h is required for the development of the mature schizont, which resembles a rosette with only 8 to 10 oval merozoites
  - b. An important diagnostic feature is the irregular appearance of the edges of the infected red blood cell
  - c. The signet-ring-shaped trophozoite is irregular in shape with ameboid extensions of the cytoplasm
  - d. Except in infections with very high parasitemia, only ring forms of early trophozoites and the gametocytes are seen in the peripheral blood
3. The life cycle of this parasite consists of two stages: the cyst and the trophozoite. The trophozoite is shown in the figure below. The most likely identification of this organism is



- a. *Entamoeba*
  - b. *Giardia*
  - c. *Trichomonas*
  - d. *Trypanosome*
4. Human infection with the beef tapeworm, *Taeniasaginata*, usually is less serious than infection with the pork tapeworm, *T. solium*, because
  - a. Acute intestinal stoppage is less common in beef tapeworm infection
  - b. Larval invasion does not occur in beef tapeworm infection
  - c. Toxic by-products are not given off by the adult beef tapeworm
  - d. The adult beef tapeworms are smaller
5. Analysis of a patient's stool reveals small structures resembling ricegrains; microscopic examination shows these to be proglottids. The most likely organism in this patient's stool is
  - a. *Ascarislumbricoides*
  - b. *Necatoramericanus*
  - c. *T. saginata*
  - d. *Trichuristrichiura*

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6. A woman complains of having paroxysmal attacks of chills, fever, and sweating; these attacks last a day or two at a time and recur every 36 to 48 h. Examination of a stained blood specimen reveals ring-like and crescent-like forms within red blood cells. The infecting organism most likely is
  - a. *Plasmodium falciparum*
  - b. *Plasmodium vivax*
  - c. *Plasmodium malariae*
  - d. *Plasmodium vivax*
  
7. One of the most clinically significant infections in patients with AIDS is *Pneumocystis jirovecii* pneumonia (PJP). PJP is a treatable disease; therefore, rapid diagnosis is essential. The method of choice for detection of *P. jirovecii* in respiratory specimens is
  - a. Methenamine-silver stain
  - b. Toluidine blue stain
  - c. Direct fluorescent antibody (DFA) microscopy
  - d. Indirect fluorescent antibody (IFA) microscopy
  
8. A renal transplant patient was admitted for graft rejection and pneumonia. A routine evaluation of his stool showed rhabditiform larvae. Subsequent follow-up revealed similar worms in his sputum. He had no eosinophils in his peripheral circulation. The most likely organism is
  - a. *Necator*
  - b. *Hymenolepis*
  - c. *Ascaris*
  - d. *Loa loa*
  
9. Amebae that are parasitic in humans are found in the oral cavity and the intestinal tract. Which one of the following statements best describes these intestinal amebae?
  - a. They are usually nonpathogenic
  - b. They can cause peritonitis and liver abscesses
  - c. They are usually transmitted as trophozoites
  - d. They occur most abundantly in the duodenum

10. Schistosomiasis is a disease characterized by granulomatous reactions to the ova or to products of the parasite at the place of oviposition. Clinical manifestations include which one of the following?
- Bladder wall hyperplasia
  - Pulmonary embolism
  - Splenomegaly
  - Cardiac abnormalities
11. Which of the following organisms penetrates skin, is endemic in Africa and Latin America, and has a large lateral spine on its eggs?
- Clonorchis*
  - S. mansoni*
  - Schistosomajaponicum*
  - Schistosomahaematobium*
12. *Ascaris* are best observed in human specimens by which one of the following?
- Sigmoidoscopy and aspiration of mucosal lesions
  - Baermann technique
  - Dilution followed by egg count
  - Examination of a cellophane tape swab
13. A tissue-dwelling trematode that may be found in feces can also be detected in
- Vaginal secretions
  - Duodenal contents
  - Blood
  - Biopsied muscle
14. A protozoan with characteristic jerky motility is most commonly observed in
- Vaginal secretions
  - Duodenal contents
  - Blood
  - Biopsied muscle

**For questions 15 to 17 indicate the cestode that is transmitted to humans through the mode indicated:**

15. Ingesting larvae in undercooked fish \_\_\_\_\_
16. Ingesting larvae in undercooked pork or eggs in food or water contaminated with human feces \_\_\_\_\_
17. Ingesting eggs in food contaminated with dog feces \_\_\_\_\_

**For questions 18 to 20 the stage in the life cycle of a given nematode (roundworm) responsible for causing human disease is stated. Indicate the matching nematode:**

18. Worms in colon may cause rectal prolapse \_\_\_\_\_
19. Larvae migrate to lung, causing pneumonia \_\_\_\_\_
20. Female worm migrates out anus and lays eggs on perianal skin, causing itching \_\_\_\_\_

**PART II: ANSWER ALL QUESTIONS (30 MARKS)**

1. State five (5) clinical signs and symptoms of *trichuriasis* (5 marks)
2. State five (5) methods of prevention and control of lymphatic *filariasis* (5 marks)
3. Describe the medical management of *amoebiasis* (5 marks)
4. Describe the life cycle of *Taeniasolium* (5 marks)
5. Majority of human parasites could be identified in fecal specimens. Describe judicious handling and processing of fecal specimens for various parasitological studies (10 marks)

**PART III: LONG ANSWER QUESTION (20 MARKS)**

1. Malaria is the leading cause of morbidity and mortality worldwide. Describe:
    - a. The life cycle of malarial infection (6 marks)
    - b. Signs and symptoms associated with malaria infection (4 marks)
    - c. Prevention and control of malaria (10 marks)
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