POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (MEDICAL PARASITOLOGY) EXAMINATION – MARCH 2022

Date: 2nd March 2022 **Time:** 9.00 a.m. – 12.00 noon

PAPER I

Answer **all five (05)** questions
Answer each question in a separate book

1. Discuss the strategies and approach for an elimination programme for leishmaniasis in Sri Lanka. (100 marks)

2. Soil-Transmitted Helminth (STH) infections such as ascariasis, trichuriasis and hookworm infection are still prevalent in some areas of Sri Lanka.

   Discuss

   2.1. the mechanisms of immunity against STHs including their expulsion from the gut (70 marks)

   2.2. the impact of immune responses triggered during STH infection on clinical outcome and response to therapy in cutaneous leishmaniasis, in a patient co-infected with STH and *Leishmania donovani*. (30 marks)

3. Sri Lanka has received its certification for lymphatic filariasis elimination as a public health issue in 2016. However, alleviation of suffering due to lymphatic filariasis morbidities is yet to achieve.

   Write an account on the national monitoring and evaluation plan on morbidity management and disability prevention programme. (100 marks)

4. Describe the global epidemiology of drug-resistant malaria and the implications of diagnosing a patient with drug-resistant falciparum malaria in Sri Lanka. (100 marks)

5. Vector control is an accepted method in disease control and elimination programmes worldwide.

   Write an account on the effectiveness of vector control programmes in disease control and elimination giving examples. (100 marks)

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Date: 2nd March 2022 **Time:** 1.00 p.m. – 4.00 p.m.

PAPER-II

Answer **all five (05)** questions
Answer each question in a separate book

1. A 65-year-old Sri Lankan man presents with difficulty in swallowing and abdominal pain. The ECG reveals an arrhythmia. Further discussion with the patient reveals that he has occasional breathlessness and had visited Ecuador and Brazil a decade ago. A parasitological cause is suspected.

   1.1. State the most likely disease and the parasite responsible. (10 marks)

   1.2. How is this parasite transmitted? Outline the life cycle. (25 marks)

   1.3. What are the pathological manifestations of this disease? (25 marks)

   1.4. How do you treat this disease? (25 marks)

   1.5. How can you prevent this disease? (15 marks)

2. You were asked to do a survey on medically important arthropods (except mosquitoes) in an overcrowded ward setting in the National Institute of Mental Health.

   2.1. List arthropods that you would expect to see during your survey. (30 marks)

   2.2. Briefly describe the medical importance of arthropods mentioned in 2.1. (30 marks)

   2.3. Prepare a plan for control and prevention of the burden due to arthropods mentioned in 2.1. (40 marks)

Contd……./2-

3. State the most possible parasitic diagnosis, discuss the best possible drug management, follow up and methods of prevention that you would apply in the following case scenarios.

   3.1. A 43-year-old tourist guide diagnosed with HIV/AIDS has presented with heavy watery diarrhoea for two days. A direct smear of a fresh faecal sample shows a large number of parasites with typical fallen-leaf movement. (35 marks)

   3.2. A 56-year-old heavy toddy drinker from Jaffna is having tender hepatomegaly. The ultrasound scan of the abdomen reveals a 10 cm unilocular abscess in the right lobe. (35 marks)

   3.3. A 3-year-old girl presented with the passage of white worm segments for several weeks. Examination revealed creamy-white and fleshy worm segments. Extracted eggs have shown hexacanth embryos with polar projections. (30 marks)

4. A 55-year-old carpenter from Piliyandala who had lymphoedema of right hand for three years, developed right axillary lymphadenopathy followed by pain and redness over the right arm. On examination, a palpable vessel was detected over the medial aspect of the right upper arm. The circulatory filarial antigen (CFA) test was positive.

   4.1. State the most possible filarial worm which could cause this pathology giving reasons. (10 marks)

   4.2. List two (02) possible pathophysiological pathways leading to the above clinical presentation. (10 marks)

   4.3. List four (04) morbidities explained in the above case scenario. (10 marks)

   4.4. Describe briefly the underlying pathophysiology for morbidities mentioned in 4.3. (10 marks)

   4.5. Describe the basis of the CFA test and discuss why it is positive in this patient. (20 marks)

   4.6. Describe the immediate management of the patient. (10 marks)

   4.7. Describe the steps in the long-term management of lymphoedema. (30 marks)

Contd...../3-

5. A 26-year-old mother, in the 13th week of her first pregnancy, was investigated for a febrile illness with lymphadenopathy suspected of toxoplasmosis. The patient has been followed up in a teaching hospital.

5.1. List two (02) features you would elicit in the history which would support the clinical suspicion. (10 marks)

5.2. List the sample required and the laboratory test to be carried out to identify the infection in this patient (10 marks)

5.3. List two (02) limitations of the test mentioned in 5.2. (10 marks)

5.4. What other tests can be performed to support an acute infection of toxoplasmosis in the mother? (20 marks)

5.5. List three (03) treatment options available if laboratory findings suggest an acute infection of toxoplasmosis. (15 marks)

5.6. The patient developed preterm contractions and underwent a caesarean section at 36 weeks of pregnancy. The clinical examination of the baby at birth shows no abnormalities.

List the laboratory tests you would recommend to exclude congenital toxoplasmosis. (10 marks)

5.7. List three (03) measures to be adopted in the management of the baby if the results of tests mentioned in 5.6. are suggestive of congenital toxoplasmosis. (15 marks)

5.8. Explain with reasons what advice you would give the mother regarding subsequent pregnancies. (10 marks)