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POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (MEDICAL PARASITOLOGY) EXAMINATION
NOVEMBER 2023

Date: 28th November 2023

Time: 9.00 a.m. – 12.00 noon

PAPER I

Answer **all five (05)** questions (Give diagrams and tables where relevant).
Answer each question in a separate book.

1. Describe the pathogenesis, laboratory diagnosis and management of falciparum malaria considering the current malaria situation in Sri Lanka.
(100 marks)
2. A primi at eight weeks of pregnancy presenting with fever and cervical lymphadenopathy is investigated for toxoplasmosis.
 - 2.1. Discuss the different laboratory methods available for diagnosis of this patient during her pregnancy. (50 marks)
 - 2.2. Discuss the management options available for this patient based on the laboratory findings. (50 marks)
3. Discuss the strategies for managing filarial lymphoedema in Sri Lanka.
(100 marks)
4. The beneficial effects of 'Helminth therapy' are being evaluated for the treatment of immune-mediated inflammatory diseases.
Discuss the rationale for doing so. (100 marks)
5. Write an account on the effect of the microbiome (microorganisms living within) on vectorial capacity of mosquitoes. (100 marks)

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Renuka
27/11/2023

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (MEDICAL PARASITOLOGY) EXAMINATION
NOVEMBER 2023

Date: 28th November 2023

Time: 1.00 p.m. – 4.00 p.m.

PAPER II

Answer **all five (05)** questions.

Answer each question in a separate book.

1. An 8-month-old boy residing in an urban slum presented with a history of poor appetite, frequent, explosive, loose and watery stools 6 - 7 episodes per day for last 2 months. He was fed formula milk with recent introduction of food. On examination, he was found to be impaired in growth but was otherwise healthy. A protozoan parasitic infection was suspected.
 - 1.1. State the most probable causative parasite giving reasons. (20 marks)
 - 1.2. Describe the laboratory investigations that can be done for confirmation of diagnosis. (40 marks)
 - 1.3. Describe the pathogenesis of diarrhoea and impairment of growth in this child. (20 marks)
 - 1.4. List the sequelae associated with this parasite. (20 marks)

2.
 - 2.1. Describe the main vector control strategies for *Culex* species giving examples. (40 marks)
 - 2.2. Describe the role of vector control in the Global Programme for the Elimination of Lymphatic Filariasis. (30 marks)
 - 2.3. Compare the effectiveness of the control strategies mentioned in 2.1 in controlling sandflies. (30 marks)

Contd.../2-

3.

3.1. A 6-year-old orphan presented with severe perianal itching. On examination, creamy white worms measuring about 1 cm in length were detected at the anal verge. The child had been treated previously for similar episodes with broad-spectrum anthelmintics.

3.1.1. State the most probable helminthic infection. (05 marks)

3.1.2. Discuss why this child is getting repeated episodes of perianal itching. (20 marks)

3.1.3. Outline an action plan to overcome the current scenario. (10 marks)

3.2. An 11-year-old boy presented to the Teaching Hospital, Karapitiya with myalgia, headache, low-grade fever, vomiting and a stiff neck of 6 days duration. He had traveled to Thailand several times with his parents. On specific questioning, the boy admitted that he had eaten a meal containing raw snails while in Thailand. Investigations revealed marked eosinophilia (26%) on the third day of hospitalization. Clinical suspicion was on eosinophilic meningoencephalitis due to a parasite.

3.2.1. What is the most probable causative parasite? (05 marks)

3.2.2. Describe its mode of transmission to humans. (10 marks)

3.2.3. State the treatment recommended for this condition. (10 marks)

3.2.4. Mention another clinical presentation of the same parasitic infection. (05 marks)

3.3. A 46-year-old fisherman with chronic alcohol abuse from Jaffna, is found to have intercostal tenderness and hepatomegaly. The ultrasound scan of the abdomen reveals a right lobe hepatic abscess. He gives no history of travelling outside of Sri Lanka. A parasitological disease is suspected.

3.3.1. What is the most probable causative parasite? (05 marks)

3.3.2. How should this patient be treated? (15 marks)

3.3.3. If the abscess is large, what should be the management? (15marks)

4. A 10-year-old boy presented with fever, cough and wheezing of 5 days duration. His white blood cell counts were as follows (normal range is given within brackets):

Total white blood cells	10800/mm ³	(4000 - 11000)
Neutrophils	3600/mm ³	(2000 - 7700)
Lymphocytes	2500/mm ³	(800 - 4400)
Eosinophils	4000/mm ³	(40 - 440)
Basophils	50/mm ³	(0 - 110)
Monocytes	650/mm ³	(80 - 880)

- 4.1. Name three (03) possible parasitic infections and their likely causative agents that should be considered in the differential diagnosis of this child. (15 marks)
- 4.2. Give the mode of transmission of each parasite mentioned in 4.1. (15 marks)
- 4.3. Identify the laboratory investigations needed for confirmation of diagnosis. (20 marks)
- 4.4. Considering one (01) of the parasitic infections mentioned in 4.1:
- 4.4.1. Mention the treatment of choice. (20 marks)
- 4.4.2. Advise on prevention and control of infection. (30 marks)
5. The World Health Organization in its road map for neglected tropical diseases 2021–2030 has identified visceral leishmaniasis for elimination from the Indian sub-continent with some countries already expected to achieve their targets by the end of this year.
- 5.1. List the factors which favour elimination of visceral leishmaniasis from the Indian sub-continent. (20 marks)
- 5.2. Briefly describe the key strategies adopted under the regional programme to achieve this goal. (30 marks)
- 5.3. In Sri Lanka, a National Strategic Plan is now being formulated for control of leishmaniasis. Propose an intervention plan to address the situation in Sri Lanka. (50 marks)