

POSTGRADUATE INSTITUTE OF MEDICINE

UNIVERSITY OF COLOMBO

MD (MEDICAL PARASITOLOGY) EXAMINATION – APRIL/MAY 2016

Date: 28th April 2016

Time: 1.00 p.m. - 4.00 p.m.

Paper I

Answer **all five** (5) questions.

Answer each question in a separate book.

1. According to latest information, the first vaccine tested against malaria with the use of large scale clinical trials (phase 3) in multiple sites across sub-Saharan Africa has shown only limited efficacy. The results at 18 months indicate efficacy of 46% against clinical malaria in children and 27% among infants. It was also shown that it loses effectiveness over time, even with a booster immunization. Analyze this scenario giving possible reasons for the observations made and likely implications of this study outcome.
(100 marks)
2. “Toxoplasmosis is the most serious opportunistic parasitic infection in the world”. Comment on this statement, giving your views for and against it.
(100 marks)
3. Discuss the seroepidemiology, risk factors, and methods for diagnosis of toxocariasis in Sri Lanka. Enumerate other parasitic zoonoses where dog is the intermediate or definitive host, giving mode(s) of transmission for each.
(100 marks)
4. Discuss the transmission patterns of soil-transmitted helminthiasis (STH) and factors that help to establish the endemicity of the infections. You are appointed to lead a program to eradicate STH in your own country. Chart a plan of action to execute this program and explain how and why your eradication strategy will succeed.
(100 marks)
5. What are the emerging and re-emerging diseases transmitted by arthropods that will be a threat and a serious challenge to public health? How and why would global climatic changes affect the distribution of these infections?
(100 marks)

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Date: 29 April 2016

Time: 9.00 a.m. - 12.00 noon

Paper II

Answer **any five (5)** questions.

Answer each question in a separate book.

1. You are heading a laboratory diagnostic centre in Colombo.
 - a. How would you go about in setting up an efficient detection system for water and food-borne parasites? (50 marks)
 - b. What are the parameters to ensure accurate reporting? (20 marks)
 - c. How would you report to the health authorities and show evidence that infections are on the rise or otherwise? (30 marks)

2. Sri Lanka has had no reported cases of indigenous transmission of malaria since 2012. Discuss the role of the diagnostic laboratory in supporting the elimination of malaria and maintaining it. (100 marks)

3. Discuss the global impact of the discoveries and the use of artemisinin and ivermectin, including the effect on current worldwide distribution of parasitic infections. (100 marks)

4. A 27-year old male who had travelled abroad had a splenectomy. Following this, he has developed fever, fatigue, joint pains and headache. A thin blood film prepared from this patient has shown Maltese-cross shaped structures within the red blood cells.
 - a. What is the responsible parasite for this condition? (10 marks)
 - b. Which other infections are transmitted by the same vector? (30 marks)
 - c. How is this transmitted? (20 marks)
 - d. What are the treatment modalities which could be used to treat this patient? (40 marks)

5. A patient diagnosed with primary immunodeficiency presented with a large mucosal tissue ulceration that spread across the soft and hard palate.
 - a. Name a possible parasitic cause. (10 marks)
 - b. List the laboratory diagnostic methods that could be used for confirmation of diagnosis indicating the advantages and disadvantages of each. (40 marks)
 - c. Give an account of principles of prevention and control strategies that could be planned in a given setting. (50 marks)

6. The Global Programme for the Elimination of Lymphatic Filariasis (GPELF) has embarked on the elimination of transmission of lymphatic filariasis since year 2000.
 - a. Give a brief account on the current stage of the program. (30 marks)
 - b. Discuss whether the strategies and the plan of actions are meeting the initial objectives? (40 marks)
 - c. What are the future challenges facing this program? (30 marks)

7. *Enterobius vermicularis* infections continue to be highly prevalent even after the elimination of other intestinal nematode infections in many countries, including Sri Lanka. Discuss the reasons for this, and the measures that are necessary for significant reduction in the prevalence of *E. vermicularis*. (100 marks)