POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (MEDICAL PARASITOLOGY) EXAMINATION – JANUARY, 2019

Date: 29th January 2019   **Time:** 9.00 a.m. – 12.00 noon

PAPER I

Answer **all five** (5) questions.
Answer each question in a separate book.

1. "Auto-infection is a life cycle strategy used by many parasites". Explain this statement giving examples.

(100 marks)

2. *Plasmodium knowlesi*, a primate malaria parasite commonly found in Southeast Asian countries and increasingly reported in travelers returning from these countries, is now recognized as the fifth species of *Plasmodium* causing malaria in humans.
   Describe the epidemiology of *Plasmodium knowlesi* malaria and discuss the challenges in diagnosis and control of this infection.

(100 marks)

3. Stories of success in controlling soil-transmitted helminthes (STH) infections have been reported from few countries including Korea, China and Cambodia.
   Discuss the strategies of the World Health Organization for long-term control and elimination of STH infections.   (50 marks)

   Comment on the current status and control program of STH infections in Sri Lanka.   (50 marks)

4. "Effectiveness of insect vectors in disease transmission is an important factor that should be considered in disease control activities". Discuss this statement giving examples, with emphases on local situations.

(100 marks)

5. The level of interest towards the development of new tools for management and control of parasitic infection has been on the rise, particularly during the last few years. Critically evaluate the utility and potentioal impact of such novel strategies, giving examples.

(100 marks)

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Date: 29th January 2019 **Time:** 1.00 p.m. – 4.00 p.m.

PAPER II

Answer **all five** (5) questions.
Answer each question in a separate book.

1. A study aimed at investigating the re-infection pattern of soil-transmitted helminth infections after a single dose of albendazole (400 mg) was carried out among 320 school children in rural areas of Sri Lanka. The number of infected children over time is shown in the table.

Infection	No. of cases infected			No. of cases infected	
	Before treatment	14 days after treatment	Cure rate (%)	6 months after treatment	12 months after treatment
Ascariasis	200	10	95	100	200
Trichuriasis	300	120	60	210	300
Hookworm	100	0	100	50	100

1.1. Discuss the efficacy of a single dose of albendazole on the three types of infection. (40 marks)

1.2. What are your suggestions to increase the cure rate of albendazole against trichuriasis? (20 marks)

1.3. Explain the pattern of re-infections over time (i.e. at 6 and 12 months after treatment). (40 marks)

2. "Elimination of kala azar from the Indian subcontinent" is a program that commenced in year 2005. The framework for such elimination was subsequently updated with the timelines to reach elimination extended up to year 2020.

2.1. List the strategies that are being utilized in this program.

(30 marks)

2.2. What are the factors that should be considered in setting a deadline for such a regional level program? (30 marks)

2.3. Discuss the chances of success of this program with a focus on strengths and weaknesses. (40 marks)

3. Insecticide resistance developed by the vectors is a major challenge faced by the disease control programs around the world.

    3.1.   What are the mechanisms by which the insect vectors develop resistance against insecticides.   (20 marks)

    3.2.   How do you monitor the development of insecticide resistance?   (30 marks)

    3.3.   Describe the methods that can be used to minimize the development of insecticide resistance?   (50 marks)

4. A 47-year-old post renal transplant patient presented with chronic watery diarrhoea.

    4.1.   List the parasites that could be responsible for this condition.   (20 marks)

    4.2.   Describe the laboratory diagnostic methods used to identify the aetiology of diarrhoea in this patient.   (40 marks)

    4.3.   Discuss the principles of management of this patient.   (40 marks)

5.

    5.1.

        5.1.1. Name the first line drug treatment used in Sri Lanka for each of the following parasitic infections.

            5.1.1.1. Intestinal amoebiasis

            5.1.1.2. Lymphatic filariasis

            5.1.1.3. *Plasmodium falciparum* malaria

            5.1.1.4 Hook worm infections

            5.1.1.5. Cutaneous leishmaniasis

                        (25 marks)

        5.1.2. Name ONE (01) main side effect of each drug mentioned for 5.1.1.1 and 5.1.1.2.   (10 marks)

        5.1.3. Name ONE (01) contra indication of a drug mentioned for 5.1.1.3.   (05 marks)

    5.2.   Lymphatic filariasis is not a killer disease. Write a justification explaining why it should be eliminated.   (60 marks)