

UNIVERSITY OF JAFFNA, SRI LANKA**SECOND EXAMINATION FOR MEDICAL DEGREES (2nd) December****Microbiology Paper II****Date: 14.12.2020****Time allowed: 2 hours**

Answer all four questions. Please write answers to Question 1 and 2 in one answer book and use separate answer book for Questions 3 and 4.

- 1) A 28-year-old man was admitted to the Teaching hospital Jaffna with high fever, nausea, headache, malaise and retroorbital pain for three days. His WBC and platelet count on the day of admission were $3,800/\text{mm}^3$ and $110,000/\text{mm}^3$ respectively. However, both counts were found to be decreasing since admission. A diagnosis of dengue was confirmed by dengue specific tests.
 - 1.1 Describe the source and mode of transmission of dengue virus. (15 marks)
 - 1.2 Describe the pathogenesis of dengue viral infection. (30 marks)
 - 1.3 State the different phases of dengue viral infection and discuss the specific virological tests available to diagnose dengue infection in each of the phases you have mentioned. (35 marks)
 - 1.4 Discuss the challenges in prevention and control of dengue viral infection. (20 marks)
 - 2) A previously healthy 48-year-old farmer presented to the base hospital, Anuradhapura with fever, headache and severe myalgia for seven days and yellowish skin discoloration. On examination, he had bilateral conjunctival suffusion and hepatomegaly. His blood samples were sent to MRI for a specific microscopic agglutination test (MAT).
 - 2.1 State the most likely diagnosis and name the aetiological agent responsible for the above condition. (10 marks)
 - 2.2 Describe the source and modes of transmission of this infection. (15 marks)
 - 2.3 Describe the pathogenesis of this infection. (25 marks)
 - 2.3 Discuss the microbiological tests used for the aetiological diagnosis of this infection. (30 marks)
 - 2.4 Discuss the preventive measures for this infection. (20 marks)
-

3) A nine-year-old boy was admitted with blood stained diarrhoea of five days duration.

- 3.1 Name five (5) possible causative organisms for this condition. (15 marks)
- 3.2 Describe briefly the pathogenesis of blood-stained diarrhoea. (20 marks)
- 3.3 Describe briefly collection, storage and transport of **stool specimen** for culture from this patient. (20 marks)
- 3.4 Discuss the use of antibiotics for the treatment of diarrhoea in this child. (45 marks)

A 54-year-old diabetic woman complained of vaginal discharge, **irritation and soreness**.

On examination, there was a white, curd like lesion in the vagina and signs of inflammation.

- 4.1 Name the most possible causative organism for this infection. (10 marks)
- 4.2 Name the other infections caused by the organism mentioned in 4.1. (15 marks)
- 4.3 Describe the risk factors for the infections caused by this organism. (45 marks)
- 4.4 Discuss the antimicrobial treatment **of this** infection in this patient. (30 marks)