



UNIVERSITY OF JAFFNA, SRI LANKA

SECOND EXAMINATION FOR MEDICAL DEGREES PART (I)

May 2026

Academic Year 2021/2022

Microbiology - Paper II



Date: 05.05.2026

9.00 am to 11.00 am. (Two hours)

Answer all four questions

Answer each question in a separate answer book

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1. A 22-year-old university student was admitted with a history of sudden onset of high fever for one day with fatigue, headache and photophobia. On examination, he was drowsy and had neck stiffness. Necessary specimens were sent for the aetiological diagnosis. The microbiologist called the following day to state that Gram negative diplococci were seen in one of the specimens.
- 1.1 State the most possible diagnosis. (05 marks)
- 1.2 Name the most possible causative organism of the infection you mentioned in 1.1. (05 marks)
- 1.3 Name the **two (2)** important specimens to be collected from this patient **and** the tests that can be done on those for the aetiological diagnosis. (10 marks)
- 1.4 Describe the measures that should be taken to minimise contamination of the specimens you mentioned in 1.3. (30 marks)
- 1.5 Discuss the antibiotic treatment of this patient. (25 marks)
- 1.6 Describe the transmission-based precautions to be practiced in this patient when in the ward. (25 marks)
2. A six-year-old child was brought to the Out Patient Unit with a history of soreness of throat with pain on swallowing and fever. Her temperature was 39.2°C. Her tonsils were enlarged with exudate.
- 2.1 Name the most possible bacteria that could have caused pharyngitis in this child. (10 marks)
- 2.2 Describe all the clinical features you would consider in differentiating whether the pharyngitis in this child is due to bacteria or virus. (30 marks)
- 2.3 Name the specimen to be collected and **two (2)** microbiological tests that can be done on it to confirm the bacteria mentioned in 2.1. (15 marks)
- 2.4 Outline the measures to minimise contamination of the specimen mentioned in 2.3. (20 marks)
- 2.5 State the temperature at which the specimen mentioned in 2.3 should be sent to the laboratory. (05 marks)
- 2.6 Discuss the antibiotic treatment of this child including its impact on the possible complications. (20 marks)

3. A 35-year-old man presented to the Teaching Hospital Jaffna with a three-day history of high fever. He complained of severe joint pain affecting both wrists, ankles, and the small joints of his hands, making it difficult for him to move. He also reported headache and generalized body aches. He mentioned that several people in his neighborhood had recently experienced similar symptoms. On examination, his temperature was 39°C. A mild maculopapular rash was noted over the trunk. Laboratory investigations revealed a white blood cell count of 3,200/mm³ (reference range 4,500-11,000/mm³) and a platelet count of 165,000/mm³ (reference range 150,000 - 400,000/mm³). Dengue NS1 antigen was negative. Chikungunya was suspected.

- 3.1 Describe the source and modes of transmission of chikungunya. (15 marks)
- 3.2 Briefly describe the pathogenesis of chikungunya. (25 marks)
- 3.3 Outline the possible outcomes of patients following chikungunya. (20 marks)
- 3.4 Discuss the laboratory tests available for the aetiological diagnosis of chikungunya. (25 marks)
- 3.5 Describe the possible reasons for the re-emergence of this infection in 2025 in Sri Lanka. (15 marks)

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4.1 A 33-year-old woman presented to the gynecology clinic with a five-day history of intense vulvar pruritus and a burning sensation during urination. She recently completed a long course of broad-spectrum antibiotics for a respiratory infection. On examination, her vaginal walls were inflamed. Adherent white patches and a thick, curd-like vaginal discharge were seen.

- 4.1.1 State the most likely diagnosis **and** the causative organism (species). (10 marks)
- 4.1.2 Outline the factors which can predispose to the infection mentioned in 4.1.1. (15 marks)
- 4.1.3 State the laboratory tests that can be used to confirm the diagnosis. (10 marks)
- 4.1.4 State the antimicrobial treatment for the infection mentioned in 4.1.1. (10 marks)

4.2 4.2.1 List **other** non-invasive and invasive infections caused by the causative agent mentioned in 4.1.1 (15 marks)

4.2.2 Describe the predisposing factors for the infections mentioned in 4.2.1. (25 marks)

4.2.3 Outline the treatment for the invasive infections caused by the organism mentioned in 4.1.1. (15 marks)