



UNIVERSITY OF JAFFNA, SRI LANKA
SECOND EXAMINATION FOR MEDICAL DEGREES PART I (2nd)

April 2021

Microbiology Paper II

Date: 07.04.2021

Time allowed: 2 hours

Answer all four questions.

Answer each question in a separate answer book.

1. A 75-year-old male presented to an outpatient department with bilateral jaw pain and stiff temporomandibular joints. He also complained of generalized body stiffness. His muscle tone was increased. He gave a history of stepping on an old nail in the garden.
 - 1.1 What is the most likely clinical diagnosis? (10 marks)
 - 1.2 What is the causative agent responsible for this condition? (10 marks)
 - 1.3 Would you perform any laboratory investigations to confirm aetiology? (10 marks)
 - 1.4 Outline the pathogenesis of this condition with the aid of a flow diagram. (50 marks)
 - 1.5 State two measures that could have prevented this condition. (20 marks)

2. A 7-year-old boy was attacked by a stray dog while he was playing in a park. He had some puncture wounds on his neck and abdomen. The dog was found to be dead on the street the next day.
 - 2.1 State the most likely viral infection acquired through this incident. (10 marks)
 - 2.2 Describe the other possible modes of transmission of the infection you mentioned in 2.1. (15 marks)
 - 2.3 Describe the pathogenesis of the infection mentioned in 2.1. (20 marks)
 - 2.4 Describe three key steps in management of this boy (giving reasons) to prevent the development of the illness mentioned in 2.1. (30 marks)
 - 2.5 Briefly describe the measures which would reduce the incidence of this diseases in Sri Lanka. (25 marks)

3. A 58-year-old man presented with a cough of three weeks duration associated with loss of weight and loss of appetite. On auscultation, crepitations were heard over the left upper zone of the chest.

3.1 State the most possible infective disease this patient could have and the common causative organism for this illness. (10 marks)

3.2 Describe the source and mode of transmission of the organism you mentioned in 3.1. (20 marks)

3.3 Name the tests available in Sri Lanka for the aetiological diagnosis of this clinical condition and discuss the advantages and disadvantages of these tests. (40 marks)

3.4 Describe how to collect, store and transport the necessary specimen from this patient for aetiological diagnosis. (30 marks)

4 A 15-year-old previously well girl was admitted to the medical ward of a teaching hospital with a 3-day history of headache and fever. On examination, she had neck stiffness and fever, but no obvious rash or focal neurology. She had not been given antibiotics before admission to hospital. Lumbar puncture was performed and her CSF results are shown:

Protein: 0.7g/L

Glucose :20mg/dL (Simultaneously taken blood sugar 63mg/dL),

Microscopy :300 white cells, predominantly polymorphonuclear leukocytes

4.1 What is the clinical diagnosis in this patient? (10 marks)

4.2 What is the most likely causative agent of this infection in this patient? (10 marks)

4.3 Explain how the aetiological diagnosis of this infection can be made (using the CSF as well as any other samples which could be used) (40 marks)

4.4 How can this infection be prevented? (10 marks)

4.5 List one other microbe which can cause infections with similar CSF findings. (10 marks)

4.6 Briefly discuss the barriers to infection at this site. (20 marks)

