

UNIVERSITY OF JAFFNA, SRI LANKA
BACHELOR OF SCIENCE IN MEDICAL LABORATORY SCIENCES
FOURTH YEAR FIRST SEMESTER EXAMINATION –OCTOBER 2019
MLSCM 4125 CLINICAL MICROBIOLOGY

Date: 05.11.2019

Time: 3 hours

ANSWER ALL SIX QUESTIONS.

1. A stool sample of a five year old child is received for microbiological diagnosis.
 - 1.1 Name three bacterial pathogens which can be isolated from this specimen. (10 marks)
 - 1.2 Briefly describe how to process the above sample in a clinical microbiology laboratory. (30 marks)
 - 1.3 Describe how you would identify the bacteria you mentioned in 1.1 in a clinical microbiology laboratory. (60 marks)

2.
 - 2.1 Explain minimum inhibitory concentration (MIC). (10 marks)
 - 2.2 Describe the situations in which MIC should be done in routine clinical microbiology laboratories. (25 marks)
 - 2.3 Describe two methods used to determine MIC. (40 marks)
 - 2.4 Describe Kirby Bauer (CLSI) method of antibiotic sensitivity test. (25 marks)

3. A cerebrospinal fluid sample from a two weeks old baby is received from the neonatal ICU for microbiological investigation.
 - 3.1 Name three bacterial pathogens which can be isolated from this specimen. (15 marks)
 - 3.2 Describe how you would process this sample in a clinical microbiology laboratory. (30 marks)
 - 3.3 Describe how to identify the pathogens mentioned in 3.1. (55 marks)

4. Describe the underlying principle, procedure, interpretation and the importance of the following tests.

4.1 AFB staining and culture (40 marks)

4.2 Nagler's reaction (30 marks)

4.3 CAMP test (30 marks)

5. A urine sample of a 33 year old woman is received in the clinical microbiology laboratory.

5.1 Name five bacterial pathogens which can be isolated from this specimen. (10 marks)

5.2 Describe how you would process this sample. (25 marks)

5.3 Describe how to identify **any three** of the pathogens mentioned in 5.1. (45 marks)

5.4 Describe how to report any urine specimen received for microscopy and culture. (20 marks)

6. A sputum sample is received from a patient with suspected pneumonia.

6.1 Name five possible bacterial pathogens that can be isolated from this sputum sample in a routine clinical microbiology laboratory. (10 marks)

6.2 Mention five instances where you would reject a sputum sample in a microbiology laboratory. (15marks)

6.3 Describe how to process a sputum sample. (25 marks)

6.4 Describe how to identify **any three** of the pathogens mentioned in 6.1 in a clinical microbiology laboratory. (50 marks)