FACULTY OF MEDICINE, UNIVERSITY OF JAFFNA, SRILANKA

EXAMINATION FOR ALLIED HEALTH SCIENCES DEGREE IN

MEDICAL LABORATORY SCIENCES

FOURTH YEAR SECOND SEMESTER EXAMINATION FEBRUARY 2014

MLSCM 4201 CLINICAL MICROBIOLOGY

Date: 03.03.2014 Time: Three hours

Answer all questions

1. Urine specimen of a 53 year old lady with recurrent UTI is given to you for investigation.
   - 1.1 Name five bacteria that cause urinary tract infection. (10marks)
   - 1.2 Name five different specimens you could receive for urine investigation. (10marks)
   - 1.3 Describe how you would perform the microscopic examination on urine specimen. (30marks)
   - 1.4 Describe how you would culture the urine specimen. (30marks)
   - 1.5 Describe, with the help of a flowchart, how you would identify the causative bacteria if you isolate a Gram positive cocci. (20marks)

2. Urethral swab of a 29 year old man with urethral discharge is sent to you for investigation.
   - 2.1 Name two common bacteria that cause urethral discharge. (10marks)
   - 2.2 Mentions 5 specimens other than the urethral swab that could be used in the diagnosis of Sexually transmitted infection. (10marks)
   - 2.3 Describe how you would perform the microscopic examination on the specimen given to you. (25marks)
   - 2.4 Describe how you would identify the bacteria you mentioned in 2.1 in a routine laboratory in Sri Lanka. (55marks)

3.
   - 3.1 Name two molecular diagnostic methods used to detect or identify microorganisms. (10marks)
   - 3.2 Describe briefly the basic principles of the methods you mentioned in 3.1 (20marks)
   - 3.3 Discuss briefly the need for the use of molecular methods in

the diagnosis of microorganisms. (30marks)

3.4 Discuss the advantages and disadvantages of molecular methods in the diagnosis of microorganisms. (40marks)

4.

4.1 Name five bacteria that produce the enzyme catalase. (10marks)

4.2 Name five biochemical tests, **other than** catalase test, carried out in Microbiology laboratories to identify bacteria. (10marks)

4.3 Describe briefly how to perform catalase test. (35marks)

4.4 Write note on triple sugar agar test. (45marks)

5.

5.1 A 63 year old man with an ulcer on his feet had been in the hospital for a week. MRSA was isolated from his wound swab.

5.1.1 What does MRSA stand for? (05marks)

5.1.2 Name three specimens you would receive to **screen** for MRSA. (15marks)

5.1.3 Describe how you would identify MRSA including the culture media and the growth requirements. (30marks)

5.2 Describe how you would identify ESBL production. (50marks)

6. A sputum sample of a 65year old patient with cough and fever for a week is given to you for processing.

6.1 Name 3 possible pathogens from a sputum sample. (15marks)

6.2 Mention 4 bacteria that commonly contaminate sputum specimens. (10marks)

6.3 Describe how you would assess the quality of the sputum microscopically. (25marks)

6.4 Describe how you would identify the organisms you mentioned in 6.1. (50marks)