



RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES, MIHINTALE.

B.Sc. (Special) Degree in Applied Biology
Fourth Year – Semester I Examination – April/May 2015

MIB 4302 - MEDICAL MICROBIOLOGY

Time: Three (03) hours

Answer all questions

1. A 38 year old patient complained to the doctor that he has itchy circular scaly areas on the skin of his beard area.
 - a) Deduce the most possible diagnosis. (05 marks)
 - b) Name the causative organism/s. (10 marks)
 - c) Describe the methods of collecting and transporting the specimen. (25 marks)
 - d) Explain a procedure of identifying the pathogen/s. (60 marks)

2. a) Discuss the genus *Haemophilus* in relation to growth requirements. Explain how you identify different species of *Haemophilus* in the laboratory. (40 marks)
 - b) Mention two diseases caused by *H. influenzae* (10 marks)
 - c) Explain how to process a needle aspiration sample of a patient (30 marks)
 - d) Describe how to perform an ABST (10 marks)
 - e) Describe a method to test β lactamase production of *H. influenzae* (10 marks)

3. Compare and contrast the following;
 - a) *Corynebacterium diphtheriae* and *Clostridium tetani* (25 marks)
 - b) *Streptococcus pneumoniae* and *Streptococcus agalactiae* (25 marks)
 - c) enriched media and enrichment media. (25 marks)
 - d) beta lactams and Aminoglycosides (25 marks)

4. A patient with bacteremia was treated with an antibiotic of cephalosporin group. A blood culture was requested. Patient's signs and symptoms were not improving and the antibiotic was not responding. The doctor inquired the ABST report from the microbiology laboratory. A new MLT was there and he stated that there is a Coliform growth which is sensitive to ceftazidime and co amoxyclav but resistant to cephalixin, cefuroxime, ampicillin and cefotaxime.

- a) Describe the mistake done by the MLT. (30 marks)
- b) Explain how to demonstrate the resistance method of *E.coli* (30 marks)
- c) Describe how to perform the ABST for an *E.coli* by the comparative method (40 marks)

5. Write short notes on the following;

- a) *Neisseria gonorrhoeae* (25 marks)
- b) *Epidermophyton floccosum* (25 marks)
- c) identification of MRSA and staphylococcal diseases (25 marks)
- d) lab diagnosis of typhoid fever and identification of the causative organism (25 marks)