

THE OPEN UNIVERSITY OF SRI LANKA

B.Sc. / B.Ed. DEGREE PROGRAMME – LEVEL 04

BYU4303/ BOE4303- PRINCIPLES OF MICROBIOLOGY

FINAL EXAMINATION -2024/2025

DURATION: TWO (02) HOURS



602

DATE 09th December 2024

TIME : 1.30 p.m – 3.30 p.m

Answer any four (04) of the six (06) Questions. All questions carry equal marks.
Use fully labelled diagrams where appropriate.

1. Describe in detail
a) four (04) morphological characters and (36 marks)
b) six (06) biochemical characteristics (69 marks)
that is useful in the systematic examination of bacteria.

2. Write short notes on the following
a). The MPN method for determining the viable count of bacteria (35 marks)
b). Local lesion assay for plant viruses (33 marks)
c) Light microscopy (33 marks)

3. a). What is meant by the term 'Antibiotic' (08 marks)
b). Describe in detail the major groups of antibiotics based on their chemical structure. (72 marks)
c). Describe the disc diffusion technique used to determine the sensitivity of a given bacterium to (three) different antibiotics. (20 marks)

4. a). What is meant by the term Genetic Variability in bacteria (20 marks)
b). Discuss transduction as a means of creating genetic variability in bacteria (80 marks)

5. a). Briefly state why microorganisms are considered as ideal experimental tools in biology. (32 marks)
b). Discuss the role microbial metabolism plays in the natural environment (40 marks)
c) Briefly state (07 reasons) why viruses are not included in the classification system although they are considered as microorganisms (28 marks)

6. a). Citing suitable examples, write a brief description of the different types of media used in microbiological laboratories. (36 marks)
- b). Describe the methods used for maintenance, storage and subculturing of pure cultures in a microbiological laboratory. (64 marks)

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