



00306

THE OPEN UNIVERSITY OF SRI LANKA
B.Sc./B.Ed. DEGREE PROGRAMME - BOTANY – LEVEL 04
BOU2103/BOE 4102/BTU 2104/BTE4104/BTI4104 – PRINCIPLES OF
MICROBIOLOGY
FINAL EXAMINATION – 2010/2011



DURATION: TWO (02) HOURS

Date: 17th December 2010

Time: 9.30 a.m. – 11.30 a.m.

Answer any **FOUR (04)** questions.

1. Write short notes on the following:
 - a. Bacterial conjugation
 - b. Mycoplasma
 - c. Selective and differential culture media
 - d. Slide culture technique for fungi

2. a. With the aid of suitable fully labeled diagrams, describe the structure of a bacteriophage.
b. Briefly discuss how bacteriophages can be enumerated using:
 - (i) particle counts
 - (ii) infectivity assay.Include the advantages and disadvantages of each of these methods in your answer.

3. a. What is meant by 'exponential growth of a bacterial culture'?
b. Briefly describe the environmental factors which influence microbial growth.
c. Explain the pattern of microbial death using suitable graphs.

4. 'Microorganisms are ideal tools for the investigation of biological phenomena.'
Comment on this statement.

5. a. What is metabolism? What role does ATP play in metabolism?
b. Compare and contrast between fermentation and respiration in organotrophic bacteria.
c. What is the significance of the electron transport chain in energy generation?

6. a. Distinguish between 'narrow spectrum antibiotics' and 'broad spectrum antibiotics'.
b. Briefly describe how antibiotics are grouped based on their chemical structure.
c. Explain the four ways in which antibiotics kill or damage microbial pathogens.