



RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES

Bachelor of Science Honours in Microbiology
Fourth Year Semester I Examination –July/August 2023

MIB4103- MOLECULAR MICROBIOLOGY

Time: One and half (1½) hours

Answer ANY THREE (03) questions.

1. a) Justify the importance of quorum sensing in bacteria. (20 marks)
b) Explain the necessity for fratricide during sporulation of bacteria. (30 marks)
c) Propose strategies of using quorum sensing as an alternative to antibiotics. (50 marks)

2. a) Explain briefly about the bacterial two component system. (20 marks)
b) Illustrate the phosphatase and kinase activities during signal transfer in the two component systems. (40 marks)
c) Describe a two-component system of your choice. (40 marks)

3. a) List five (05) functions of plasmids. (20 marks)
b) Illustrate the addiction system of bacteria used against plasmid curing. (40 marks)
c) Compare replication methods of linear plasmids and circular plasmids. (40 marks)

4. a) Explain why DNA is taken through transformation mainly for survival. (20 marks)
b) Explain generalized transduction as a product of the lytic cycle. (30 marks)
c) Justify the importance of the CII molecule in lysogenic switch. (50 marks)

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