



**RAJARATA UNIVERSITY OF SRI LANKA  
FACULTY OF APPLIED SCIENCES**

**Bachelor of Science Honours in Microbiology  
Third Year – Semester II Examination – January/ February 2023**

**MIB 3205 – PLANT MICROBIAL INTERACTIONS**

**Time: Two (02) hours**

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**Answer ALL questions.**

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1. Much emphasis is now focused on exploiting rhizosphere microorganisms as biofertilizer, yet, each step in the popular process of isolating rhizosphere microbes and using promising microbes identified in the laboratory have many drawbacks. Critically analyse such potential drawbacks in isolation and inoculation, limiting your answer to emphasize on specificities of plant-microbe interactions. **(100 marks)**
2. a) Discuss the role of MAMPs and effector molecules in establishing plant microbe interactions. (Details of the molecular signal transduction process are not expected). **(50 marks)**  
b) Plant associated microorganisms can be considered as an external genome of the host plant. Justify this statement, citing functions of associated microflora to promote plant growth and health. **(50 marks)**
3. Discuss the potential of root endophytic fungi to improve soil health and productivity. **(100 marks)**
4. Discuss briefly the mechanisms of plant-bacterial symbiotic biological nitrogen fixation. **(100 marks)**

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