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RAJARATA UNIVERSITY OF SRI LANKA  
FACULTY OF APPLIED SCIENCES

B.Sc. (special) Degree in Applied Biology  
Fourth Year - Semester I Examination – October/November 2017

MIB 3104-MOLECULAR MICROBIOLOGY

Time: One and half (11/2 ) hours

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Answer three (3) questions only

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1. Write short notes on;
  - a) AHL based quorum sensing (40 marks)
  - b) bacterial *avr* genes (30 marks)
  - c) type III secretion injectors. (30 marks)
  
2.
  - a) List five bacterial processes governed by two component systems. (20 marks)
  - b) Illustrate the signal transduction process of a model bacterial two component system focusing on kinase and phosphatase activities. (30 marks)
  - c) Discuss *Agrobacterium tumefaciens* t-DNA transfer process as a model two component system. (50 marks)
  
3. Giving examples, write an essay on how PGPR have a positive impact on plant growth and development. (100 marks)
  
4.
  - a) Argue why external application of IAA, SA and Jasmonic acid may not always bring a positive impact on the plants concerned. (50 marks)
  - b) Assess *Agrobacterium tumefaciens* as a strategic pathogen. (50 marks)

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