RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES

B.Sc. (special) Degree in Applied Biology
Fourth Year - Semester I Examination – June/July 2018

MIB - 4207 MICROBIAL GENETICS

Time: Two (02) hours

Answer ALL questions.

1. Write short notes on the following.
   a) Nitrogen sensing circuit of biological nitrogen fixation **(30 marks)**
   b) Role of RecA in recombination **(30 marks)**
   c) DNA binding and uptake in Gram negative bacteria **(40 marks)**

2. a) Explain why the fungal-plant interaction is not very specific in Mycorrhizae. **(30 marks)**

   b) Justify the need of different hyphal growth and branching strategies in AM fungi. **(30 marks)**

   c) Evaluate **five (05)** common plant genes required for AM development. **(40 marks)**

3. a) Describe how the *par* system avoids plasmid curing. **(30 marks)**

   b) Compare integrons with transposons. **(30 marks)**

   c) Illustrate double strand nick repair model. **(40 marks)**

4. a) Illustrate basic replication mechanisms of linear plasmids. **(50 marks)**

   b) Evaluate prokaryotic tree of life based on recent arguments. **(50 marks)**

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