



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

B.Sc. (Special) Degree in Applied Biology

Third Year Semester I Examination – September/October 2019

MIB 3203 – VIROLOGY

Time: Two (02) hours

Answer ALL questions.

1. Some viral genomes are composed of RNA. Discuss how RNA viruses pass on their genetic information and replicate in a DNA based cellular system. **(100 marks)**
2. A team of researchers isolated a novel λ bacteriophage strain from an environmental sample. Sequencing of its genome revealed a mutation on O_R1 site of O_R . This research team recommended that this mutant λ bacteriophage is a better candidate for use in phage therapy (therapeutic use of bacteriophages to kill infecting bacteria) than other λ bacteriophages. Comment on the recommendation made by the researchers. **(100 marks)**
3. Discuss why it is important for viruses to have a high genetic economy and how it is maintained. **(100 marks)**
4. Explain the underlying molecular basis of scrapie and what sort of precautions must be taken to prevent the spread of the disease if affected animals are found. **(100 marks)**

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