



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

**Bachelor of Science in Applied Sciences
Third Year – Semester II Examination –January/February 2023**

MIB 3201 - INDUSTRIAL MICROBIOLOGY

Time: Two (02) hours

Answer any Four (4) questions

1. If you have been asked to develop a food waste and garden waste composting facility, what are the factors you should consider when manufacturing nitrogen rich compost?
(100 marks)

2. As a microbiologist, describe the factors you should consider in manipulating up-stream process and down-stream process when using a fermentor for alcohol production [consider yeast (*Saccheromyces cerevisiae*) as the starter culture].
(100 marks)

3. Describe the process of oyster mushroom (*Pleurotus sajor-caju*) production and its potential of alleviating hunger in resource-poor rural farmers.
(100 marks)

4. Discuss briefly, the following add-on nutrient removal capabilities built into industrial scale activated sludge systems using appropriate schema, microbes responsible, biochemical reactions and enzymes responsible.
 - a) Biological nitrogen removal (BNR) capability **(50 marks)**
 - b) Enhanced biological phosphorus removal (EBPR) capability **(50 marks)**

5. Discuss the different steps in biogas production and evaluate the perspectives of biogas use in sustainable development.
(100 marks)

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