

The Open University of Sri Lanka
Faculty of Natural Sciences
B.Sc/ B. Ed Degree Programme



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| Department | : Botany |
| Level | : Four |
| Name of the Examination | : Final Examination |
| Course Title and - Code | : Principles of Microbiology - BYU 4303 |
| Academic Year | : 2020/21 |
| Date | : 22/12/2021 |
| Time | : 9.30-11.30 a.m. |
| Duration | : Two (02) hours |

General Instructions

1. Read all instructions carefully before answering the questions.
2. This question paper consists of six (06) questions in **two (02)** pages.
3. Answer any four (04) questions only. All questions carry equal marks.
4. Answer for each question should commence from a new page.
5. Draw fully labelled diagrams where necessary
6. Involvement in any activity that is considered as an exam offense will lead to punishment
7. Use blue or black ink to answer the questions.
8. Clearly state your index number in your answer script

1. Describe four (04) morphological / structural characters, four (04) biochemical characters and three (03) physiological characters used by you in the laboratory to identify bacteria.

2. (a). Briefly explain the following processes:

- i. Glycolysis
- ii. Alcoholic fermentation
- iii. Lactic acid fermentation.

(b). Tabulate the key differences between fermentation and aerobic respiration of bacteria.

3. With the help of suitable diagrams give a concise account of the structure, symmetry and replication of viruses.
4. (a) Describe and illustrate with a schematic diagram the steps to be followed when preparing *E.coli* capable of producing insulin.
- (b) Make a list of characters that make plasmids ideal vectors in genetic engineering
5. Write short notes on the following
- (a) Louis Pasteur's contribution to microbiology
- (b) Generalized transduction
- (c) Isolation and cultivation of plant and animal viruses
6. (a). How are bacteria grouped based on their source of energy and carbon. Give an example for each group/ category.
- (b) Discuss how environmental factors affect the growth of bacteria and fungi.

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