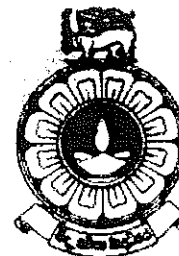


The Open University of Sri Lanka
Faculty of Natural Sciences
B.Sc/ B. Ed Degree Programme



Department	: Department of Botany
Level	: Level 5
Name of the Examination	: Final Examination
Course Title and - Code	: Environmental and Applied Microbiology
Academic Year	: 2020/2021
Date	: 02.04.2022
Time	: 9.30 am – 11.30 am
Duration	: 02 hours

General Instructions

1. Read all instructions carefully before answering the questions.
 2. This question paper consists of **six (06)** questions in **one (01)** page.
 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.
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THE OPEN UNIVERSITY OF SRI LANKA

B.Sc. DEGREE PROGRAMME- LEVEL 5

FINAL EXAMINATION – 2020/2021

BOTANY

BOU3100/BYU 5300/BYE5300/BOE5100- ENVIRONMENTAL AND APPLIED

MICROBIOLOGY

DURATION – TWO (02) HOURS

Date – 02nd April 2022

Time – 09.30am – 11.30am

Answer any four (04) questions.

1. a) List the major types of microorganisms found in soil, along with their relative proportions of occurrence.
b) Define the following interactions occurring between microorganisms in soil.
 - i. Competition
 - ii. Ammensalism
 - iii. Predation
 - iv. Parasitismc) Using appropriate illustrations and named examples, explain how bacteria and fungi resist unfavorable environmental conditions in soil.
2. a) What are the sources of potable water?
b) List the characteristic features of an indicator organism used to detect and estimate the level of fecal contamination of water.
c) Name and describe briefly the steps involved in the municipal water treatment process and explain their roles in making water safe to drink.
3. a) List the advantages and disadvantages of using single cell proteins (SCPs) as a food for humans.
b) Food can be categorized into three groups, based on how quickly they spoil. Briefly define these groups giving suitable examples.
c) 'Salt and sugar are used to create hypertonic environment for microorganisms and are often used as food preservatives'. Justify this statement.
4. a) Briefly explain the stages of process of a disease.
b) Write an essay on mechanisms of innate (natural) immunity of man against infectious microorganisms.
5. Write short notes on any three (03) of the following.
 - a) Manufacturing of beer
 - b) Living reservoirs of infection
 - c) Action of interferons on viruses
 - d) Activated sludge process in sewage treatment
6. Give a concise account on how microorganisms are exploited in each of the following processes.
 - a) Production of bio-fertilizers
 - b) Manufacturing of vinegar
 - c) Bioremediation
 - d) Production of yoghurt