

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



Department	: Botany
Level	: Four
Name of the Examination	: Final Examination
Course Code and Title	: <b>BYU4303 Principles of Microbiology</b>
Academic Year	: 2019/20 <i>Baudlos</i>
Date	: 11/01/2020
Time	: 9.30 am – 11.30 am
Duration	: 2 hours

### General Instructions

1. Read all instructions carefully before answering the questions.
2. This question paper consists of 06 questions in 01 pages.
3. Answer any **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
5. Relevant log tables are provided where necessary.
6. Having any unauthorized documents/ mobile phones in your possession is a punishable offense
7. Use blue or black ink to answer the questions.
8. Circle the number of the questions you answered in the front cover of your answer script.
9. Clearly state your index number in your answer script

1. a. Write a brief account of the specific groups of antimicrobial chemical agents including the different types, their practical applications and modes of action.  
b. Antibiotics are also a type of antimicrobial chemical agent. What do you understand by the term 'Antibiotic'?.  
c. Make a list of different types of antibiotics based on their chemical structure.
  
2. a. Differentiate between a viable count and total count of microorganisms in a sample.  
b. Discuss the Dilution plate method and Most Probable Number method used to determine viable counts of bacteria.
  
3. a. What do you understand by the term 'Genetic variability in bacteria'?  
b. Discuss transduction as a means of causing genetic variability in bacteria.
  
4. a. Organisms belonging to varying taxonomic groups are grouped as microorganisms. State the common features that form the basis for the grouping as microorganisms.  
b. "The therapeutic aspect of medicine evolved greatly in the 19<sup>th</sup> and 20<sup>th</sup> century with the knowledge of microbiology". Discuss this statement.
  
5. a. Write an account on the different types of culture media used in microbiology.  
b. (i) Describe briefly why Viruses cannot be cultured using general purpose culture media used in microbiological laboratories.  
(ii) State the alternate methods used in laboratories to grow viruses.
  
6. Write short notes on the following.
  - a. 'ImViC' testes for identifying coliform bacteria
  - b. Fermentation in bacterial metabolism
  - c. Slide culture technique of observing fungi