

University of Ruhuna- Faculty of Technology
Bachelor of Biosystems Technology Honours Degree
Level 1 (Semester II) Examination, November / December - 2023
Academic year 2021/2022

Course Unit: BST 1262 - Basic Microbiology (Theory) Duration: 1 hour and 30 minutes

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Please read and follow the **instruction** carefully before answering the questions.

- Answer **All Two (2)** questions in **PART 1 in the given space.**
- Answer Only **Two (2)** questions in **PART 2.**
- Use separate book for answering the questions in **PART 2.**
- Each question should be started with a new page.
- Calculators and mobile phones are not allowed

PART 1 – Answer All questions

Question 01

A fungus is defined as any member of the group of eukaryotic organisms that includes microorganisms such as yeasts and molds, as well as the more familiar mushrooms.

- I. Mention two (02) reasons for **not classifying** fungi under kingdom Plantae (20 Marks).

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- II. Point out the main difference/s between nutrient uptake methods of kingdom Animalia and kingdom Fungi (20 Marks).

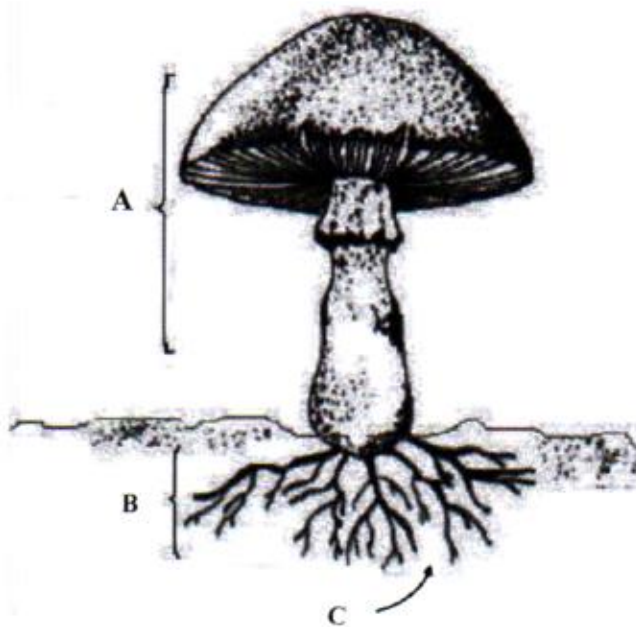
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- III. Identify A, B and C (30 marks).



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IV. Write down the main steps of the reproductive cycle of fungi (30 marks).

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Question 02

I. Point out **four (04)** major studying areas found commonly under food microbiology (12 Marks).

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- II. Fill out the following table with **one (01) characteristic, one (01) Symptom, one (01) food item** reference to the food pathogens **(48 Marks)**.

Food pathogen	Characteristics	Symptoms	Foods
<i>Clostridium botulinum</i>			
<i>Salmonella sp.</i>			
<i>E. coli</i>			
<i>Vibrio cholerae</i>			

- III. Differentiate the processes of lactic acid fermentation and alcoholic fermentation **(20 Marks)**.

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- IV. Point out the main difference between homofermentative lactic acid bacteria and heterofermentative lactic acid bacteria **(20 Marks)**.

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PART 2 – Answer two (02) questions only

Question 01 (100 Marks)

- I. Diagrammatically illustrate the growth curve of microbial lab culture with its main phases (10 Marks).
- II. Point out the main **two (02)** characteristics of above mentioned each growth stage (20 Marks).
- III. Mention **five (05)** factors affect for the bacterial growth (10 Marks)
- IV. Briefly explain the effect of above-mentioned factors on bacterial growth (60 Marks).

Question 02 (100 Marks)

- I. Differentiate the “cidal agents” and “static agents” with reference to the controlling of micro-organisms (10 Marks).
- II. Point out **four (04)** types of antimicrobial agents with two (02) examples in each category (30 marks).
- III. Write a brief account on the physical methods that can be used to control micro-organisms (60 Marks).

Question 03 (100 Marks)

Write down short notes on followings

- I. Microorganisms as biofertilizers (20 Marks)
- II. Classification of protozoans (20 Marks)
- III. Effects of osmosis on bacterial cell (20 Marks)
- IV. Binary fission Vs. budding (20 Marks)
- V. Bacterial cell arrangement (20 marks)

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