

The Open University of Sri Lanka
Faculty of Natural Sciences
Diploma in Food Science



Department	: Chemistry
Level	: 3
Name of the Examination	: Final Examination
Course Title and Code	: Food Microbiology & Food Spoilage (CYD3313)
Academic Year	: 2021-2022
Date	: 25th September 2022
Time	: 9.30 a.m. – 11.30 a.m.
Duration	: 2 hr

1. Read all instructions carefully before answering the questions.
2. This paper consists of two parts as Part - A (3 essay type questions) and Part - B (3 essay type questions) in (2) pages.
3. Answer 02(two) questions from each Part (A and B).
4. Answer for Part A and B questions separately and then attach together. Answer for each question should commence from a new page.
5. Each question carries 100 marks.
6. Use a blue or black pen not a pencil. Use the given book to write down answers for (4) essay questions.
7. Draw fully labelled diagrams where necessary.
8. Clearly state your **index number in your answer script**.
9. Involvement in any activity that is considered as an exam offense **will lead to punishment**.

PART A

Answer 02(two) questions from Part A.

01.

- (i) Draw a fully labelled diagram of a bacterial growth curve (log number of cells vs time) in a batch culture.
- (ii) Briefly describe what happens in each phase.
- (iii) List five extrinsic factors that can affect growth and proliferation of microorganisms.

02.

- (i) Mushroom cultivation is a popular cottage industry in Sri Lanka. Briefly state reasons for mushrooms gaining popularity in the food industry.
- (ii) Describe the steps involved in Oyster mushroom cultivation.

03. Write short notes on the following.

- (i) Water activity and microbial growth
- (ii) Activities of microorganisms on food
- (iii) Probiotics

PART B

Answer 02(two) questions from Part B.

04.

- (i) List the factors that could cause food spoilage, giving two examples for each factor.
- (ii) 'Crystallization is beneficial in the preparation of candies, but sometimes it is non-beneficial'. Give two examples of the non-beneficial effects of crystallization.
- (iii) "Spoilage causes loss of sensory qualities".
Discuss this statement with reference to suitable examples.

05.

- (i) Write concisely on food spoilage by enzymatic reactions and microorganisms by citing suitable examples.
- (ii) Briefly explain how to prevent spoilage of food due to the action of enzymes.

06. (i) What pathogens cause foodborne diseases? Give two examples for each type of pathogen.

- (ii) Food-borne diseases can be prevented at home or retail outlets or processing industry. Briefly explain five keys laid down by World Health Organization (WHO) to prevent food borne-diseases.
 - (iii) List out the steps to be followed in Hazard Analysis Critical Control Points (HACCP) analysis.
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