

NATIONAL UNIVESRITY OF LESOTHO
DEPARTMENT OF ENVIRONMENTAL HEALTH
B.Sc. ENVIRONMENTAL HEALTH
END OF SEMESTER II EXAMINATIONS
EHS302 – FOOD SAFETY AND TECHNOLOGY

May 2011

100 marks

Time: 3 hours

Answer any 5 of the following 7 questions. Each question carries 20 marks. Where a question is subdivided into parts, the mark for each part is shown in brackets.

Question 1

Briefly describe the minimum requirements for achieving food safety in relation to the following:

- a. Food contact surfaces [5]
- b. Walls [5]
- c. Refrigeration equipment [5]
- d. Lighting [5]

[20]

Question 2

- a. Explain why the temperature range 21-30°C is usually described as the danger zone in food storage. [10]
- b. *Listeria monocytogenes* poses a serious threat for refrigerated food. Explain [10]

[20]

Question 3

Outline the requirements necessary for achieving good personal hygiene. [20]

Question 4

- a. What should be included in a microbiological specification for food? [10]
- b. The table below shows sampling plans for three microorganisms in frozen shrimp.

Test	n	c	m	M
Mesophilic aerobic bacteria	5	2	10^5	10^6
<i>Staphylococcus aureus</i>	5	2	5×10^2	5×10^3
<i>Salmonella</i> sp.	5	0	0	-

Explain the rationale for choosing the stated sampling plan for each microorganism. [10]

[20]

Question 5

- a. Distinguish between pasteurization and sterilization. [4]
- b. State the factors that influence the heat resistance of microorganisms in food. [5]
- c. Briefly explain why it is justifiable to use nitrite in food as a preservative. [6]
- d. What are the concerns associated with using artificial sweeteners in food? [5]

[20]

Question 6

- a. Outline the concept of “food control”, stating its components. [10]
- b. Explain the role of Sanitary and Phytosanitary (SPS) regulations in international food trade. [10]

[20]

Question 7

- a. Define the following types of defects found in cans.
 - i. Major defects [3]
 - ii. Critical defects [3]
 - iii. Minor defects [3]
- b. Write notes on the following:
 - i. Flipper [4]
 - ii. Springer [4]
 - iii. Hermitic seal [3]

[20]