

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**FOURTH YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR
OF SCIENCE IN FOOD SCIENCE AND TECHNOLOGY**

FOST 465: SANITATION AND WASTE MANAGEMENT

STREAMS: FOST

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 08/04/2020

8.30 A.M. – 10.30 A.M.

INSTRUCTIONS:

- **Answer ALL questions in section A and any TWO in section B**
- **Do not write anything on the question paper. All rough work to be done on the answer booklet and crossed through.**

SECTION A: ANSWER ALL QUESTIONS (30 MARKS)

1. Describe the following systems of cleaning and sanitation
 - (a) Manual cleaning (3 marks)
 - (b) CIP (3 marks)
 - (c) COP (3 marks)
2. Presence of pests in a food production facility poses a great danger as they can cause food borne illness and bad reputation for the company. Control of these pests requires goods knowledge of the types of insects, how to detect them and how to control them. As an expert in this field;
 - (a) Describe categories of pests of concern in a food industry and give examples in each category. (3 marks)
 - (b) Describe the integrated pest management system. (8 marks)
3. Every employee in a food facility is required to observe high degree of personal hygiene. Describe the standard procedure for washing hands after visiting the washrooms? (5 marks)

4. How should a food plant layout be designed in order to minimize non-microbial contamination? (5 marks)

SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)

5. You are the food production manager in a beef processing company and you have been tasked to lead the food safety team in developing sanitation standard operating procedures (SSOPs) in readiness for ISO 22000: 2018 certification. Explain the standard procedure of addressing the following
- (a) Requirements for Sanitation SOP Implementation, Corrective Action and Record Keeping. (10 marks)
 - (b) Tasks you would follow to verify compliance with Sanitation SOP requirements. (10 marks)
6. ISO 14000 (Environmental Management Systems) requires that companies treat their waste water before releasing it to the environment. Describe the stages listed below in waste water treatment process.
- (a) Secondary treatment process (10 marks)
 - (b) Tertiary treatment process (10 marks)
7. Food processing plants are cleaned depending on the type of food being processed. Describe the systems used to clean the following food facilities
- (a) Bakery plants (10 marks)
 - (b) Dairy processing plants (10 marks)
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