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**KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**UNIVERSITY EXAMINATION, 2022/2023 ACADEMIC YEAR**  
**FOR THE CERTIFICATE IN HOSPITALITY MANAGEMENT**  
**CHM 107- FOOD SCIENCE AND NUTRITION**

Date: 14<sup>th</sup> December 2022  
Time: 11:30am – 1:30pm

**INSTRUCTIONS TO CANDIDATES**

**ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS**

**QUESTION ONE (30 MARKS)**

- a) There are so many cases of presence of microorganisms in the foods, name the conditions that would have led to their increased growth. (3 Marks)
- b) You have left some food for quite some time but when warming it to eat you note that it is unfit for consumption. State some ways you would tell the food could not be consumed. (3 Marks)
- c) i) A fellow student comes across the terms “biological food poisoning” when doing her revision, she need your help in understand what the terms mean. How would you explain it to her. (2 Marks)
- ii) You have identified some food commodities are causing bacterial food poisoning. Name some of the food commodities identified. (2 Marks)
- d) You need to ensure that food is well preserved. Give reasons. (3 Marks)
- e) i) Your friend has been diagnosed with nutritional marasmus. Which signs and symptoms can you note from your friend? (5 Marks)
- ii) As food workshop staffs, which rules should you follow to control contamination by houseflies. (6 Marks)
- f) The following terms have been used in food science and nutrition, a friend needs help in understanding them. Explain their meaning to your friend
- i) Sterilization (2 Marks)
- ii) Microbial food spoilage (2 Marks)
- iii) Micro-organism (2 Marks)

**QUESTION TWO (20 MARKS)**

- a) When preparing food, you come across the following substances. Explain the manner in which they may cause food poisoning
- i) Lead (2 Marks)
- ii) Arsenic (2 Marks)
- iii) Antimony (2 Marks)
- b) You have been advised to use the following methods of food preservation. Explain how you would apply the methods
- i) Dehydration (2 Marks)
- ii) Chilling (2 Marks)

- c) You want to use some food additives to enhance the flavor of food. Explain how you would differentiate between *synthetic* food additives and *artificial* food additives. (4 Marks)
- d) You have been sent to the nearest market to purchase some citrus fruits. Which ones would you buy? (3 Marks)
- e) How would you use the fruits purchased in (d) above? (3 Marks)

### **QUESTION THREE (20 MARKS)**

- a) During different practical lessons, you noted some critical points where food contamination could occur. Explain those critical points. (10 Marks)
- b) During a field trip to Brookside Milk Processing Company, you noted that the manufacturers used various micro-organisms. Name the microorganisms used. (5 Marks)
- c) You left some food for a few hours and went out for some errands, but when you came back the food was spoiled. What could be the main causes of spoilage. (5 Marks)

### **QUESTION FOUR (20 MARKS)**

- a) i) How would you know a person is suffering from HIV/AIDS. (3 Marks)  
ii) Which ways can blood transmit HIV? (3 Marks)
- b) Enzymes are commonly used in food processing, which desirable roles do they play? (4 Marks)
- c) Differentiate between 'saturated' and 'unsaturated' hydrocarbons. (4 Marks)
- d) i) Identify the first THREE members of alkane series of hydrocarbons. (3 Marks)  
ii) Draw the structure and write the structural formulae of each alkane named in 10 (i) above. (3 Marks)

### **QUESTION FIVE (20 MARKS)**

- a) As a chef in a two-star hotel, which food components would you include in the menu to ensure that the dishes prepared have a balanced diet. (5 Marks)
- b) Which groups of foods based on the nutrients they contain would you encourage the guests to eat? Explain their function in the body. (6 Marks)
- c) You have been assigned the duty of serving breakfast, name the effects that would occur when you heat proteins. (5 Marks)
- d) Food additives are commonly used during production, what are their functions? (4 Marks)