



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH AND APPLIED SCIENCES

DEPARTMENT OF HEALTH SCIENCES

QUALIFICATION: BACHELOR OF ENVIRONMENTAL HEALTH SCIENCES	
QUALIFICATION CODE: 08 BEHS	LEVEL: 6
COURSE CODE: FMH 611S	COURSE NAME: FOOD AND MEAT HYGIENE 2A
SESSION: JUNE 2019	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
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INSTRUCTIONS
<ol style="list-style-type: none">1. Answer ALL the questions.2. Write clearly and neatly.3. Number the answers clearly.

THIS QUESTION PAPER CONSISTS OF 6 PAGES (Including this front page)

SECTION A [33 MARKS]

QUESTION 1

[10 MARKS]

- 1.0 Assess the following statements and choose the correct one, only write the question number and the correct letter next to it.
- 1.1 Which of the following is true about bacteria; [1]
- a) Bacteria multiplies and grows faster in warm environments
 - b) Bacteria needs air to survive
 - c) Every type of bacteria can give people food poisoning
 - d) By freezing food you can kill bacteria
- 1.2 The ideal temperature in your fridge should be? [1]
- a) 4 – 10 degrees
 - b) 1 and 4 degrees
 - c) 0 to 4 degrees
 - d) -2 to 0 degrees
- 1.3 Identify one of the following foods is likely to contain the MOST bacteria? [1]
- a) Frozen raw chicken
 - b) Recently cooked chicken
 - c) A opened fizzy drink
 - d) Bottled mayonnaise
- 1.4 As a supervisor of a hospital cafeteria, how would you handle a line chef who presents to work with a sore throat and a fever? [1]
- a) Allow them to work, but keep them away from food
 - b) Put them in the kitchen and don't allow them to have contact with the customers
 - c) Tell them to tough it out and do what they normally do anyway

d) Send them home

1.5 Which of the following foods is most likely to cause norovirus gastroenteritis? [1]

a) Raw poultry

b) Uncooked eggs

c) Shellfish

d) Milk

1.6 What food is a common allergen? [1]

a) Dairy products

b) Wheat

c) Soy

d) All of the above

1.7 Rachael is opening a new seafood restaurant and wants to try a dish made with barracuda. What toxin does she need to be concerned about? [1]

a) Brevetoxin

b) Ciguatoxin

c) Histamine

d) Saxitoxin

1.8 What does HACCP stand for? [1]

a) Hazard Analysis Critical Control Point

b) Hazard Analysis Control Checking Point

c) Hazard Analysis Control Check Point

d) Hazard Analysis Chemical Control Point

- 1.9 Mention the best way to avoid seafood toxins? [1]
- a) Cook seafood to an internal temperature of 165°F
 - b) Store seafood in the freezer until cooked
 - c) Buy seafood from reputable, approved suppliers
 - d) Smell seafood to detect any toxins
- 1.10 Why is bread not a high risk food? [1]
- a) It is low in fat
 - b) It is high in fiber
 - c) It is low in protein
 - d) It doesn't last long enough to become infected with anything

QUESTION 2

[10 MARKS]

2.0 Define the following Terms/concepts as used in Food and Meat Hygiene:

- 2.1 Hepatitis [2]
- 2.2 Blanching [2]
- 2.3 Toxins [2]
- 2.4 Aseptic Sampling [2]
- 2.5 Food sustainability [2]

QUESTION 3

[13 MARKS]

- 3.1 Sour milk or yoghurt have a longer shelf life than pasteurised milk. Can you explain the reason for this increase in shelf life? [2]
- 3.2 State 3 microorganisms commonly associated with bakery products and give possible route of contamination. [3]
- 3.3 Suggest 2 different methods of preserving each of the following foods: [8]
- a) Milk

- b) Fish
- c) Grapes
- d) Minced meat

SECTION B [37 MARKS]

QUESTION 4

[17 MARKS]

- 4.1 Outline the difference between best before and use by dates? [3]
- 4.2 Spoilage of food is dependent on the growth of bacteria and other microorganisms. Please estimate the cell concentrations (cfu / g = colony forming unit /g) for the following conditions. [4]
- a) Organoleptic changes: _____ cfu / g food
 - b) First sensorial changes / turbidity visible _____ cfu / g food
 - c) Sensorial changes clearly detectable _____ cfu / g food
 - d) Strong odour changes/slime formation and texture changes _____ cfu / g food
- 4.3 The growth of microorganism in food is influenced by different factors, discuss 3 intrinsic factors that influence the growth microorganism in food products. [6]
- 4.4 List four groups of people who are likely to be affected by food poisoning? [4]

QUESTION 5

[20 MARKS]

- 5.0 As a food safety officer at your local milk processing plant Namibia Dairies, you are tasked to conduct a tour guide through the processing plant for NUST second year Food and Meat Hygiene students.
- 5.1 Elaborate on the flow of milk in the plant starting from milk delivery from farms. [10]
- 5.2 Discuss factors affecting the quality and safety of milk at farm level. [10]

SECTION C [30 MARKS]

QUESTION 6

[23 MARKS]

- 6.1 Food preservation includes a variety of techniques that allow food to be kept for extended periods of time without losing nutritional quality and avoiding the growth of unwanted microorganisms. Describe the primary objectives of food preservation. [4]
- 6.2 Beverages are prone to spoilage, state factors that may lead to contamination of beverage. [7]
- 6.3 Elaborate on the stages of cleaning [12]

QUESTION 7

[7 MARKS]

- 7.1 Motivate the aims of food borne diseases outbreak investigations. [4]
- 7.2 Deliberate of the type of samples that need to be taken during an outbreak investigation. [3]