



**UNIVERSITY OF SWAZILAND**  
**Faculty of Health Sciences**

**DEGREE IN ENVIRONMENTAL HEALTH**  
**FINAL EXAMINATION PAPER 2021**

- TITLE OF PAPER** : FOOD INSPECTION
- COURSE CODE** : EHS 428
- DURATION** : 2 HOURS
- MARKS** : 100
- INSTRUCTIONS** :
- : ANSWER QUESTION ONE AND ANY OTHER THREE
  - : EACH QUESTION CARRIES 25 MARKS.
  - : READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
  - : NO PAPER SHOULD BE BROUGHT INTO THE EXAMINATION ROOM.
  - : BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER.

**DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED BY THE INVIGILATOR.**

## Question 1

### A. True or False Questions Section

(Write true or false for each statement)

1. Milk in bottles exposed to the sun develops “sunlight” flavor due to light induced fat oxidation.
2. A customer submits a complaint to your office, while opening a dried milk powder can, brown to black stains were observed. You tell the customer to discard the product because the brown/black growths are molds or Sulphide black stains.
3. Molds may appear as white or green clumps on the surface of yogurt, yet yeast spoilage will show a strained convex cap in yogurt due to carbon dioxide.
4. Food with a pH of less than 3.0 is likely to be spoiled by aciduric bacteria.
5. The majority of spoilage problems, in pasteurized milk are derived from post-pasteurization contamination.
6. Both pasteurized milk and “UHT” milk can be stored outside the refrigerator for several weeks without spoilage.
7. Time –temperature combination is required to inactivate the most heat – resistant pathogens and spoilage organisms in food.
8. Well vacuum packaged frozen food in the freezer does not spoil for long period unless the refrigerator temperatures are abused.
9. Hot bread displayed in supermarket should be wrapped in an impervious plastic bag to prevent bread spoilage and contamination from customers.
10. In Sauerkraut (cabbage fermentation), the addition of salt restricts the activities of Gram –negative bacteria but favors lactic acid rods and cocci.

### B. Multiple Choice Questions Section

(Choose the Best Answer)

1. Reports of foodborne disease indicate that the most implicated food is usually;
  - A. a canned food
  - B. a food held for long periods at room temperatures.
  - C. an improperly cooked food
  - D. a food stored too long in the refrigerator
  - E. a food that has been handled by a sick food handler
2. Some countries consistently report more foodborne outbreaks and more cases than others. The most likely explanation for this observation is that:
  - A. The countries reporting high numbers of outbreaks have notoriously poor health departments
  - B. The environmental health officers “health inspectors” in these high reporting countries are lazy, inefficient, and poorly trained
  - C. These countries have higher rates because they encourage reporting and investigation of foodborne diseases.
  - D. The countries with higher rates have inferior sanitation practices in their food establishments.
  - E. These countries reporting higher rates are likely to be third world countries.

3. Which condition of canned food stuff spoilage is **not likely** to result in blown can;
  - A. Thermophilic spoilage
  - B. *Clostridium botulinum* spoilage
  - C. Lacquer stripping
  - D. Metallic taint
  - E. Oxidation
  
4. During shop inspection, you observe that a packet of simba chips has small holes. You will condemn the packet for;
  - A. dust contamination
  - B. the risk of oxygen presence
  - C. contamination by insects through the holes
  - D. the risk of microbial entry
  - E. all of the above
  
5. You discover a bulged canned beef in Big Bend Spar Supermarket; you reject the can as unfit for human consumption. What would have been the most likely reason to condemn?
  - A. Thermophilic spoilage
  - B. Lacquer stripping
  - C. Survival and growth of *Clostridium botulinum*
  - D. Survival and growth of *Bacillus cereus*
  - E. Survival and growth of *Staphylococcus aureas*
  
6. The most effective measure which a food service manager can apply in the control of bacterial multiplication in the storage, preparation and service of food is:
  - A. Time- temperature control
  - B. The use of disinfectants
  - C. pH control
  - D. Hot holding temperatures
  - E. Low temperature
  
7. Which of the following has the longest storage time at refrigeration (-2 to 1.5deg C) temperatures
  - A. Beef fillet
  - B. Fish fillet
  - C. Beef spleen
  - D. Chicken fillet
  - E. equal storage time since there are all meat

8. Assume you prepared several batches of the same type of the salad under the same conditions, except that you added varying amounts of vinegar. In the salads with high vinegar content, you would expect;
- a higher pH and a higher bacterial count
  - a higher pH and a lower bacterial count
  - a lower pH and a higher bacterial count
  - a lower pH and lower bacterial count
  - a neutral pH and no change in bacterial count
9. Bacterial contaminants;
- Multiply rapidly in dehydrated foods
  - Resume multiplication when dried foods are reconstituted.
  - Do not grow well in reconstituted dehydrated foods.
  - Are eliminated in foods during the dehydration process.
  - Are not found in dehydrated foods
10. Once a can containing food has been opened and partially used;
- the remaining food should be discarded after 6 hours
  - the remaining food becomes poisoned if left in the can
  - the remaining food should be covered and refrigerated in the can
  - the remaining food should not be eaten unless boiled for 30 minutes
  - the remaining food can be eaten since the can is sterile and it was processed under hygienic conditions
11. Under normal, comparable conditions, which of the following would be expected to have the highest bacterial count per gramme?
- T-bone steak
  - Hamburger
  - Drumstick
  - Ox-liver
  - Pork ribs
12. Which condition of canned food stuff spoilage is not likely to result in blown can;
- Lacquer stripping
  - Leaker spoilage
  - Metallic taint
  - Thermophilic spoilage
  - Clostridium botulinum* spoilage
13. Which of the following foods would be more suspect as the vehicle for botulism?
- Canned pineapples
  - Canned peaches
  - Home roasted beef
  - Kentucky Fried chicken
  - Home canned green beans

14. The aim of milk pasteurization in Swaziland is to destroy;
- A. *Coxiella burnetti*
  - B. *Salmonella typhi*
  - C. *Mycobacterium bovis*
  - D. *Listeria monocytogenes*
  - E. *Staphylococcus aureus*
15. During the sampling of a canned food stuff, Salmonella species bacteria are isolated from the food. Which is the more likely cause?
- A. Post-process contamination
  - B. Inadequate processing
  - C. Process failure
  - D. Pre-process contamination
  - E. Thermophilic spoilage

[25 Marks]

**Question 2**

- a. The technique of sampling food for laboratory analysis has failed to ensure food safety in the food industry. Why is that so? [4]
- b. Explain the causes of lacquer stripping and its effects in canned food stuffs. [6]
- c. During a food inspection, in a restaurant, you observe two apple juice bottles, one is cloudy and the other is clear. What steps are you going to take and why? [4]
- d. Give an example of a food item where a head foam is a quality attribute and another example where a head foam is a defect. [3]
- e. What would be the likely cause in high acid canned food stuff hard bulging? [5]
- f. Give the two probiotic microbes that are added in yogurt in Swaziland. [3]

[25 marks]

**Question 3**

- a. In your own understanding, what would have caused *Byssochlamys fulva* spoilage in raspberry juice? [4]
- b. During food inspection, you find a high number of canned food stuffs in the store room rusted. Explain the likely cause and remedy? [4]
- c. Using appropriate examples, describe a health claim in a food label? [4]
- d. What are the causes of metallic taint in canned food stuffs? [5]
- e. The canning of pineapples fruits require less heat than the canning of green peas. Why is that so? [4]
- f. What is the likely cause of a rotten smell detected from an opened can of a food stuff? [4]

[25 Marks]

**Question 4**

- a. Using good examples, explain misdemeanor in a food label. [4]
- b. Using good examples, describe extra lean meat on a label. [6]
- c. Describe the conditions and reasons that may lead you to condemn a dented canned food stuff. [6]
- d. Why are traceability systems necessary in food production? [5]
- e. Why is food labeling mandatory? [2]
- f. What does cholesterol free mean on a food label? [2]

**[25 Marks]**

**Question 5**

During food inspection of a supermarket, what are the six (6) possible conditions that may lead you to condemn and seize food products? Give a health reason why each condition makes the food stuff unfit for human consumption.

**[25 Marks]**