



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

DEGREE IN ENVIRONMENTAL HEALTH
FINAL EXAMINATION PAPER 2016

- TITLE OF PAPER** : FOOD INSPECTION & FOOD SAFETY
- COURSE CODE** : EHM 410
- DURATION** : 2 HOURS
- MARKS** : 100
- INSTRUCTIONS** :
- : ANSWER ONLY FOUR QUESTIONS
 - : QUESTION ONE IS COMPULSORY
 - : 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

Multiple Choice Questions

(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. Enzymatic browning in bruised fruits and vegetables is caused by;
 - A. Peroxidase
 - B. Pectolytic
 - C. Brown mold
 - D. Phenolase
 - E. Anthracnose

4. Bacterial soft rot in fruits and vegetables is likely to be caused by;
 - A. *Erwinia carotova*
 - B. *Pseudomonas marginalis*
 - C. *Xanthomonas compestris*
 - D. A and B
 - E. A, B and C

5. Which one of the statements about caffeine is **not correct**?
 - A. It is an alkaloid which stimulates the cortex of the brain
 - B. It also acts on the kidney to increase water elimination
 - C. Caffeine makes muscle to be less susceptible to fatigue.
 - D. The finest coffee comes from Coffee arabica and has strong, high caffeine content.
 - E. Brewed tea has 3 – 4mg of caffeine per 150ml cup

6. Which one of the following statement is **not correct**?
- A. Too low temperature in storage of fruits and vegetables interferes with enzymatic system, allowing toxic substance build up resulting in pitting
 - B. Excess carbon dioxide during the storage fruits and vegetables result in chemical damage leading to brown heart in apples and pears.
 - C. Too low temperature may result in chilling injury in fruits and vegetables which may lead to woolen factor in peaches and khaki or brown color in bananas.
 - D. Drupes have many seeds enclosed in a pulp and most species have many seeds embedded in flesh and high in vitamin C
 - E. Sugar is the major energy storage in fruits, the average sugar content of ripe fruits is 10 to 50% by wt, lime has less than 1% and dates have more than 60%.
7. In jam preservation, which factor (s) is or are important:
- A. Water activity
 - B. pH
 - C. Heat processing
 - D. A and B
 - E. A and C
8. Factors that cause inhibition and death of microorganisms in carbonated beverages are;
- A. carbon dioxide and low pressure
 - B. carbon dioxide and pH
 - C. pH and water activity
 - D. reduced oxidation-reduction potential and water activity
 - E. water activity and sugar content
9. Which of the statements is **not correct** in relation to bread flour
- A. The brown bread is the product of bran whereas white bread is the product of the endosperm.
 - B. White flour is the result of bleaching to remove the yellowness due to carotenoids and pigments
 - C. Germ removal in white flour making increases the shelf life of flour due to high lipids concentration in the germ.
 - D. Gluten in wheat has no role in brown bread making
 - E. Wheat bran contains phytic acid which makes calcium not available to the body

10. Which of the statements is **not correct** in relation to bread spoilage?
- A. Fluffy black moldy growths on bread is likely to have been caused by Rhizopus species
 - B. Pink or red moldy bread may be due to Monilia species
 - C. Whereas ropiness in bread, is likely to have been caused by Bacillus cereus
 - D. Greenish or colorful moldy growths on bread may be due to Penicillium species
 - E. Ropy bread is seen with thread- like, string-like when broken and the ropery area is yellow to brown in color
11. Sodium benzoate is added in soft drinks for;
- A. acidification in drinks so that pH remain low
 - B. killing all microorganisms in particularly molds
 - C. killing molds growing in the soft drinks
 - D. killing bacteria likely to spoil soft drinks
12. Which statement is **not correct** in relation to carbon dioxide addition in soft drinks;
- A. It gives the sparkle and zest of carbonated beverages
 - B. It gives the black color in coca cola flavored soft drinks
 - C. It improves flavor and contribute to acidic preservation
 - D. It gives the sparkling effervescent appearance
 - E. It produces a tingling mouth-feel
13. During the making of cheese, is responsible for the curdling of the cheese.
- A. Moisture reduction
 - B. Aging or ripening of the cheese
 - C. Penicillium candidum
 - D. Rennet
 - E. Penicillium roqueforti
14. Ropiness in milk is likely to have been caused by,
- A. A diseased udder
 - B. Sourness in milk
 - C. Alcaligenes viscolactis
 - D. Soapiness in milk
 - E. Milk oxidation
15. Resazurin in fresh milk is a method for testing;
- A. The amount of bacteria in milk
 - B. Off flavors in milk
 - C. Presence of taints or odor
 - D. Checking the acidity
 - E. Amount of cream

16. The enzyme which causes browning in fruits and vegetables is present in;
- A. Apricots
 - B. Melon
 - C. Tomatoes
 - D. Lime
 - E. Grapes
17. Some fruits and vegetables are attacked by specific molds and diseases, which fruit or vegetable may be attacked by *Macropoma musae*.
- A. Brinjal
 - B. Melons
 - C. Banana
 - D. Lime
 - E. Eggplant
18. Which fruit or vegetable may be attacked by *Diplodia citri*.
- A. Brinjal
 - B. Melons
 - C. Banana
 - D. Lime
 - E. Eggplant
19. Which beverage is likely to have the highest alcohol content?
- A. Whisky
 - B. Vodka
 - C. Beer
 - D. Wine
 - E. Scotch
20. Which alcoholic drink is made from grapes;
- A. Beer
 - B. Gin
 - C. Cider
 - D. Vodka
 - E. Brandy
21. Avidin and lysozyme are intrinsic antimicrobiological substances that are found in?
- A. Eggs
 - B. Milk
 - C. Tomatoes
 - D. Meat
 - E. Garlic

22. What is the primary factor in the preservation of fermented foods?
- A. Alkalinity
 - B. Acidity
 - C. Natural chemical
 - D. Water activity
 - E. None of the above
23. Under normal, comparable circumstances, which of the following would be expected to have the highest bacterial count per gram?
- A. T-bone steak
 - B. Round steak
 - C. Hamburger
 - D. Drumstick
 - E. Breast meat
24. "Candling" of eggs is concerned with;
- A. Thermostabilization
 - B. Flaming the outside shell to reduce bacterial count
 - C. Coating egg shells with wax to preserve them
 - D. Examination for internal defects
 - E. B and C
25. Which of the following foods would be more suspect as the vehicle for botulism
- A. Canned peaches
 - B. Canned pineapples
 - C. Home roasted beef
 - D. Fried chicken
 - E. Home canned green beans

[25 Marks]

Question 2

- a. A high acid canned food product is opened, and a glossy, shiny coloring on the surface of the food is observed? Explain the possible causes. [8]
- b. Explain the relationship between alcohol and impotence in man. [3]
- c. Rye-bread is very good for people who are slimming. Explain why? [4]
- d. Eggs may be graded for quality by using the AA quality, A quality and B quality standards. Explain the criteria used to grade A quality standard eggs. [10]

[25 marks]

Question 3

- a. Design a label of a food product of your choice, showing all the requirements necessary in a food label. [8]
- b. What is a health claim and explain the guidelines necessary for a health claim to be valid in prepackaged food? [8]
- c. Explain the cause of thermophilic spoilage in canned foods and show how it can be controlled. [5]
- d. The technique of sampling food for laboratory analysis has failed to ensure food safety in the food industry. Why is that so? [4]

[25 Marks]

Question 4

- a). What is "Maillard reaction" and how can you control it? [5]
- b) You open a canned solid packed cured meat product and find that it has a yellow or brown or black discoloration on the surface. What would be the possible cause? [5]
- c) Design a check list for a food hygiene inspection in a restaurant. [15]

[25 Marks]

Question 5

Eggs are highly nutritious food; it contains most of the essential food ingredients and nutrients required by the human body. It is also a perfect food article for the growth and multiplication of microorganisms, because of its good quality in microbial growth, and therefore it tends to spoil easily. Explain the measures that are necessary to ensure that this food article is kept safe for human consumption.

[25 Marks]