



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

DEGREE IN ENVIRONMENTAL HEALTH
FINAL EXAMINATION PAPER 2016

TITLE OF PAPER : FOOD HYGIENE

COURSE CODE : EHS 227

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. Cooked foods not immediately served;
 - A. offer no hazard in the transmission of foodborne diseases
 - B. if properly protected, need no refrigeration
 - C. should be cooled quickly and stored at 5° C until served
 - D. can be kept indefinitely at normal refrigeration temperature
 - E. B and C are true

2. Food handlers with boils or infected wounds should;
 - A. be assigned jobs where there is little likelihood of transmission of infection
 - B. be allowed to work with no restrictions
 - C. be allowed to work with no restrictions if the wound is bandaged
 - D. be discharged from work
 - E. be given a leave until wound heals

3. Nondisposable cloths and sponges used to clean surfaces should be handled in which one of the following ways at the end of each work day;
 - A. Rinsed and hung to air dry overnight
 - B. Boiled, washed and dried quickly
 - C. Washed, rinsed and dipped in a sanitizer solution
 - D. Kept in a disinfectant overnight
 - E. Kept in a refrigerator overnight

4. Basic steps for cleaning kitchen utensils are to;
 - A. remove gross soil, apply detergent, scrub, rinse
 - B. remove gross soil, wash, rinse and dry
 - C. remove gross soil, apply detergent, scrub, apply disinfectant, rinse
 - D. remove gross soil, wash and disinfect in same step
 - E. remove gross soil, apply detergent, scrub, rinse and apply disinfectant

5. Which kind of agents is used to loosen and soften burnt food residues on ovens or stoves;
 - A. soap
 - B. chlorine based compounds
 - C. amphoteric compounds
 - D. quaternary ammonium compounds
 - E. iodine based compounds

6. The direct or indirect transmission of objectionable matter to a food product is called by which of these names;
- A. adulteration
 - B. contamination
 - C. infection
 - D. infestation
 - E. pollution
7. Which of these cleaning agents is (are) neutralized by the presence food residues during cleaning?
- A. amphoteric
 - B. quaternary ammonium compounds
 - C. chlorinated compounds
 - D. anionic wetting agents
 - E. both A, and C
8. Food containing foodborne disease bacteria are:
- A. not necessarily decomposed in appearance
 - B. detectable by smell
 - C. detectable by taste
 - D. detectable by smell & taste
 - E. detectable by smell, taste & appearance
9. Reports of food borne disease indicate that the implicated food was usually:
- A. a canned food
 - B. a food held for long periods at temperatures favorable to bacterial multiplication
 - C. an improperly cooked food.
 - D. a food stored too long in the refrigerator.
 - E. an unwrapped food that has been handled by unwashed hands.
10. Bacterial contaminants:
- A. multiply rapidly in dehydrated foods
 - B. resume multiplication when dehydrated foods are reconstituted.
 - C. do not grow well in reconstituted dehydrated foods.
 - D. are eliminated in foods during the dehydration process.
 - E. are not found in dehydrated foods.
11. Anionic wetting agents are good detergents but they will not;
- A. wet surfaces well
 - B. emulsify fats, waxes and pigments
 - C. destroy bacteria
 - D. penetrate crevices and woven fabrics
 - E. both C and D

12. Which sanitizer is appropriate for hand washing?
A. quaternary ammonium compounds
B. anionic wetting agent
C. amphoteric compounds
D. iodine based sanitizers
E. A and D
13. Which sanitizer is not appropriate for hand washing?
A. quaternary ammonium compounds
B. anionic wetting agents
C. amphoteric compounds
D. iodine based sanitizers
E. both A and D
14. Choose the most appropriate sanitizer to be used in hard water;
A. Chlorine based sanitizers
B. Iodine based sanitizers
C. Organic acids based sanitizers
D. Amphoterics
E. A and D
15. Choose the most effective sanitizer to kill both gram negative and gram positive bacteria.
A. Amphoterics compounds
B. Quaternary ammonium compounds
C. Chlorine based sanitizers
D. A and C
E. B and C
16. An agent that forms soluble complexes when combined with certain metal ions (such as calcium & magnesium) and is used to prevent formation of film on equipment is:
A. an alkali
B. an anionic wetting agent
C. a peptizer
D. a sequestering agent
E. an emulsify
17. Which one of these substances has both wetting ability and bactericidal action?
A. anionic wetting agents
B. cationic wetting agents
C. chlorinated wetting compounds
D. nonionic wetting compounds
E. amphoteric compounds

18. A chemical agent that destroys all living microorganisms is called a:
- A. disinfectant
 - B. detergent
 - C. sanitizer
 - D. sporicide
 - E. sterilizer
19. A toxin excreted into food medium by a bacterial cell is called a(n):
- A. mycotoxin
 - B. exotoxins
 - C. enterotoxins
 - D. zoonotoxin
 - E. endotoxins
20. Factors inherent in a food that can influence microbial growth are known as:
- A. extrinsic factors
 - B. intrinsic factors
 - C. nutritional factors
 - D. processing factors
 - E. both B and C
21. What is the major source of staphylococcal infection?
- A. excreta of human
 - B. excreta of animals
 - C. unwashed hands
 - D. the nose of infected personnel
 - E. soil
22. What microorganism is likely to spoil plastic wrapped hot bread?
- A. molds
 - B. bacteria
 - C. yeasts
 - D. protozoa
 - E. virus
23. 'UHT' cartoned milk if not stored in the refrigerator for more than a day, it will;
- A. remain fresh
 - B. spoil
 - C. ferment
 - D. B and C
 - E. none of the above

24. Pasteurized bottled milk if not stored in the refrigerator for more than a day, it will;
- A. remain fresh
 - B. spoil
 - C. ferment
 - D. B and C
 - E. none of the above
25. What is primary factor in the preservation of soft drinks?
- A. Low pH
 - B. Chemical preservation
 - C. Sugar added
 - D. Refrigeration
 - E. A and B

[25 Marks]

Question 2

Define the following terms commonly used in relation to food safety;

- a) D-value [3]
- b) Acute disease [3]
- c) Z-value [3]
- d) Xerophilic microorganism [2]
- e) Neurotoxin [2]
- f) Halophile [2]
- g) Infective dose [2]
- h) Aseptic [1]
- i) Botulinum cook [3]
- j) Proteolytic cleaning agent [2]
- k) Freezer burn [2]

[25 Marks]

Question 3

- a) What is the main purpose of a canopy and extractor fan over the cooking area in the restaurant kitchens? [5]
- b) How does *Staphylococcus aureas* contaminate food? [5]
- c) Swazi can factory deals with the processing of citrus fruits. Choose the best type of floor covering would you recommend for their factory and give reasons for the choice. [6]
- d) Using appropriate examples, explain how these factors influence the cleaning of equipment and utensils in food establishments.
 - i) Water hardness [3]
 - ii) Food residues [3]
 - iii) pH [3]

[25 Marks]

Question 4

- a) A new food premise has applied to the city council of Mbabane for a construction permit. The owner seeks advice on the type of floor to be chosen for the food premise. How would you advise him or her? [8]
- b) Cleaning programs should be designed to suit the needs or requirements of a particular product and process. Why is that so? [6]
- c) Detergents and disinfectant agents play a very important role in the quest to control food borne infection in food outlets. Explain this statement. [6]
- d) Restaurants are required by law to ensure that food contamination is kept to minimal levels. How would you ensure that this practice is in place? [5]

[25 Marks]

Question 5

- a) The design and layout of food premises must follow a “linear flow” so that cross-contamination in food establishment is either reduced or eliminated. Explain this statement. [15]
- b) Discuss the benefits and shortcomings of Quaternary Ammonium Compounds (Quats) as a sanitizer. [10]

[25 Marks]