

2916/204
INTRODUCTION TO MICROBIOLOGY,
FIRST AID, PRINCIPLES OF FOOD PROCESSING
AND PRESERVATION
Oct./Nov. 2022
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN NUTRITION AND DIETETICS

MODULE II

INTRODUCTION TO MICROBIOLOGY, FIRST AID,
PRINCIPLES OF FOOD PROCESSING AND PRESERVATION

3 hours

INSTRUCTIONS TO CANDIDATES

This paper consists of TWO sections; A and B.

Answer ALL the questions in section A and any THREE questions from section B in the answer booklet provided.

Each question in section A carries 4 marks, while each question in section B carries 20 marks.

Maximum marks for each part of a question are indicated.

Candidates should answer the questions in English.

This paper consists of 3 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

SECTION A: (40 marks)

Answer ALL the questions in this section.

1. Outline how to bandage an injured hand. (4 marks)
2. Describe the first aid treatment for foreign objects in the eyes. (4 marks)
3. Outline the first aid treatment of swallowed nitric acid. (4 marks)
4. Define the following categories of culture media:
 - (a) enriched medium; (2 marks)
 - (b) differential medium. (2 marks)
5. State one function of the following organelles in bacteria cells:
 - (i) flagellum; (1 mark)
 - (ii) cell wall; (1 mark)
 - (iii) cell membrane; (1 mark)
 - (iv) capsule. (1 mark)
6. Explain the following phases in a bacterial growth curve:
 - (a) lag phase; (2 marks)
 - (b) stationary phase. (2 marks)
7. Outline the process of tyndallization. (4 marks)
8. State any four sources of microbes in foods. (4 marks)
9. Give four reasons for washing and blanching vegetables before they are frozen. (4 marks)
10. Give four reasons for processing of foods. (4 marks)

SECTION B (60 marks)

Answer any THREE questions from this section.

11. (a) State any five causes of spinal injury. (5 marks)
- (b) State any five signs of spinal injury. (5 marks)
- (c) Outline first aid treatment of a near drowning victim. (10 marks)
12. (a) Outline the Gram stain technique for staining bacteria. (10 marks)
- (b) Describe the pour plate method for culture of micro-organisms. (10 marks)
13. (a) Give five characteristics of viruses. (5 marks)
- (b) Describe the cleaning of objectives of a microscope. (5 marks)
- (c) Describe how to clean a wound. (7 marks)
- (d) State any three signs of asphyxia. (3 marks)
14. (a) State four advantages of modified atmosphere storage. (4 marks)
- (b) Describe five ways microorganisms cause food spoilage. (5 marks)
- (c) Highlight six benefits of preservation of food by heat. (6 marks)
- (d) State five advantages of fermenting foods. (5 marks)
15. (a) Define the term food additive. (2 marks)
- (b) Outline four uses of food additives. (4 marks)
- (c) Explain the meaning of the following low temperature preservation methods:
- (i) refrigeration; (2 marks)
- (ii) chilling; (2 marks)
- (iii) freezing. (2 marks)
- (d) (i) Explain four requirements for packaging materials for foods. (4 marks)
- (ii) State four disadvantages of paper as a packaging material for foods. (4 marks)

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