

1903/105
FOOD PROCESSING AND
PRESERVATION I
Oct./Nov. 2019
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

**CRAFT CERTIFICATE IN FOOD PROCESSING AND PRESERVATION
TECHNOLOGY**

MODULE I

FOOD PROCESSING AND PRESERVATION I

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Non-programmable scientific calculator.

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 as shown.

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 (60 marks)

Answer **ALL** questions in this section.

1. (a) Define milk. (2 marks)
(b) Name two categories of proteins found in milk. (2 marks)
2. Explain each of the following tests carried out in milk during reception and processing:
(a) phosphatase test; (2 marks)
(b) clot on boiling. (2 marks)
3. Milk (M_1) with 2.3% butter fat is to be standardized with milk, M_2 , with 4.0% butter fat. Calculate the amount of 3.5% butter fat product obtained after standardization of 200 kg of milk M_1 . (4 marks)
4. State four reasons for high temperature pasteurization of milk for yoghurt processing. (4 marks)
5. List four factors considered when choosing an animal for slaughter. (4 marks)
6. Explain two benefits of curing meat before canning. (4 marks)
7. Name four ingredients used in the manufacturer of sausages. (4 marks)
8. Explain four effects of smoking on quality of meat. (4 marks)
9. State four principles used in the preservation of food. (4 marks)
10. (a) Define food dehydration. (1 mark)
(b) State three reasons for dehydration of food. (3 marks)
11. Explain four uses of water in the food processing industry. (4 marks)
12. Explain the importance of using additives during food processing. (4 marks)
13. Explain two factors that influence the melting point of fats and oils. (4 marks)
14. State four functions of fats and oils in food processing. (4 marks)
15. Explain the significance of each of the following steps of fats and oils refining:
(a) deodorization; (2 marks)
(b) degumming. (2 marks)

SECTION B (40 marks)

Answer any TWO questions from this section.

16. (a) Define each of the following terms as used in the food industry: (2 marks)
- (i) pasteurization; (2 marks)
 - (ii) blanching. (5 marks)
- (b) State **five** effects of blanching raw materials before heat processing.
- (c) Explain the acquisition of raw materials for food processing by contract purchasing. (7 marks)
- (d) State **four** quality parameters that should be met by raw materials for food processing. (4 marks)
17. (a) (i) Using a flow chart, outline the steps in the manufacture of skim milk powder. (6 marks)
- (ii) Explain the evaporation step in the manufacture of milk powder. (5 marks)
- (b) State **three** importance of homogenization in the processing of pasteurized liquid milk. (3 marks)
- (c) Explain **three** factors that influence the composition of raw milk. (6 marks)
18. (a) Explain **five** methods of tenderization of meat. (10 marks)
- (b) Describe the processing of corned beef. (5 marks)
- (c) Explain the cause of pale, soft and exudative (PSE) meat for pigs. (5 marks)
19. (a) State **six** reasons for the heat treatment of the oil seeds prior to oil extraction. (6 marks)
- (b) Explain a suitable method for extraction of oil from fish. (6 marks)
- (c) Explain **four** methods used in the modification of fats and oils. (8 marks)

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