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.

Turn over

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:

(i) pasteurization; (2 marks)

(ii) blanching. (2 marks)

(b) State **five** effects of blanching raw materials before heat processing. (5 marks)

(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 exadative (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)

degumming deodorization

(c) Explain **four** methods used in the modification of fats and oils. (8 marks)

settling degumming
Neutralization
Bleaching deodorizing hydrogenation.

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