2913/204
FOOD PROCESSING AND
PRESERVATION I
Oct./Nov. 2021
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN FOOD SCIENCE AND PROCESSING TECHNOLOGY

MODULE II

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 **TWO** questions from section **B** in the answer booklet provided.*
*Each question in section **A** carries 15 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** the questions in this section.*

1. (a) Explain the purpose of food preservation. (7 marks)

   (b) Explain **four** causes of spoilage of foods. (8 marks)

2. (a) (i) Define chilling as used in food preservation. (2 marks)
   (ii) State **four** objectives of chilling in the food industry. (4 marks)

   (b) State **four** advantages of chilling of foods. (4 marks)

   (c) Explain the factors which affect the heat resistance of microorganisms. (5 marks)

3. (a) Differentiate between pickling and fermentation in fruit and vegetables processing. (4 marks)

   (b) Describe the production of pickled cucumber for long-term storage. (11 marks)

4. (a) Explain the factors that drive innovation of emerging technologies in food technology. (7 marks)

   (b) (i) Explain how dry curing of meat works. (4 marks)

   (ii) Explain any **four** factors which influence the amount of smoke deposited during meat smoking. (4 marks)

SECTION B (40 marks)

*Answer any **TWO** questions from this section.*

5. (a) Explain the safety of commercially sterilized foods. (5 marks)

(b) Discuss the benefits of blanching foods. (15 marks)

6. (a) State **seven** applications of fluidized beds in food processing. (7 marks)

(b) With the aid of labelled diagrams, describe **three** types of fluidized bed freezers. (9 marks)

(c) State **four** advantages of two-stage spray drying system. (4 marks)

7. (a) (i) Define effective freezing time. (2 marks)

(ii) Explain the effects of freezing rate on the quality of frozen foods. (4 marks)

(b) Explain **seven** benefits of food processing. (14 marks)

8. (a) Describe the process of smoking meat. (6 marks)

(b) Explain the effect of smoking sausages at a temperatures above 70°C for extended time. (6 marks)

(c) Discuss pulsed electric field as an emerging method for food processing. (8 marks)

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