

1903/105  
FOOD PROCESSING AND  
PRESERVATION I  
June/July 2023  
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL  
CRAFT CERTIFICATE IN FOOD PROCESSING & PRESERVATION  
TECHNOLOGY

MODULE I

FOOD PROCESSING AND PRESERVATION I

3 hours

INSTRUCTIONS TO CANDIDATES

*You should have an answer booklet for this examination:*

*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 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 4 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. Describe the steam displacement method of can exhaustion during canning operation. (4 marks)  
*- is good method can than exhaustion canning operation. H. has unpleasant*
2. State four preparations done on oil seeds before oil extraction. (4 marks)  
*- boiling pressing centrifugation decantation*
3. Identify four health problems associated with consumption of meat and meat products. (4 marks)  
*- malnutrition, obesity, disease, E. coli*
4. Describe each of the following physical properties of milk:  
(a) density; (2 marks)  
(b) viscosity. (2 marks)  
*- High - can swe cause heat tre*
5. With the aid of a graph, describe the rate of drying for a food material. (4 marks)
6. Distinguish between blanching and pasteurization as applied in food processing and preservation. (4 marks)
7. Explain the effects of pasteurization of milk on the following parameters:  
(a) nutrients; (2 marks)  
(b) enzymes. (2 marks)
8. (a) Define 'rigor mortis'. (2 marks)  
(b) Explain the pale, soft and exudative (PSE) post-mortem quality problem associated with meat. (2 marks)
9. State four functions of starter cultures in the manufacture of dairy products. (4 marks)
10. State four factors which cause fluctuations in low temperature storage. (4 marks)
11. Explain the trickling method of vinegar production in the food industry. (4 marks)
12. Explain the following methods as applied in fats and oils processing:  
(a) Deodorization; - remove odours from atmosphere (2 marks)  
(b) Degumming. (2 marks)

13. Differentiate between vertical retorts and horizontal retorts as applied in food processing and preservation. (4 marks)
14. Using a flow chart, describe the production of fermented fruit pickles. (4 marks)
15. State **four** reasons why micro-organisms are regarded as the most troublesome in the food processing industry. (4 marks)

**SECTION B (40 marks)**

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

16. (a) Figure 1 below show a particular food undergoing spoilage.

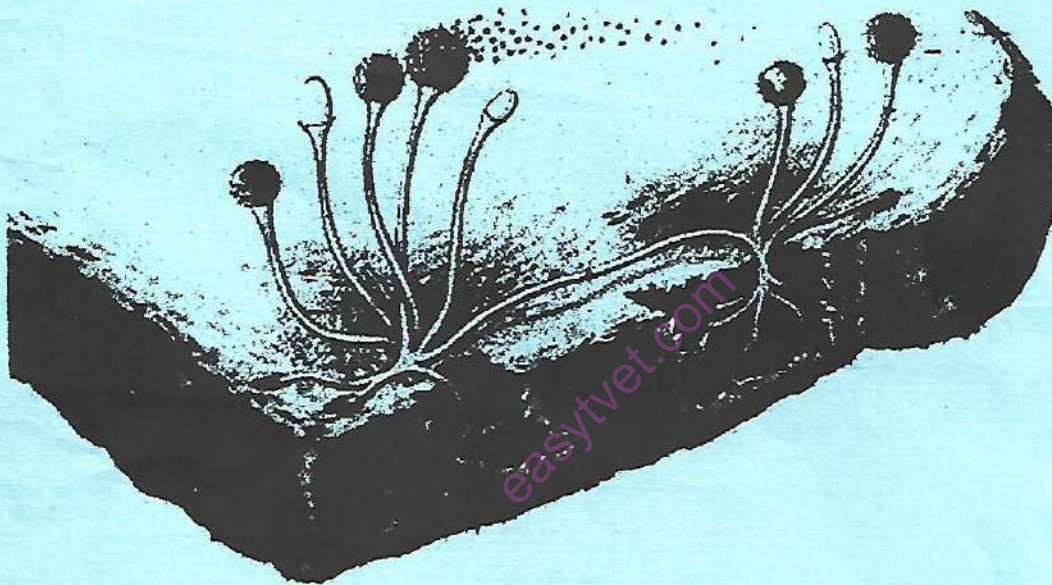


Fig. 1

- (i) Identify the type of food spoilage. (2 marks)
- (ii) Explain **five** extrinsic factors which influence the type of spoilage shown in Figure 1 above. (10 marks)
- (b) Explain **four** preservation effects of smoking. (8 marks)
17. (a) State **four** factors which affect meat quality. (4 marks)
- (b) Distinguish between veal and mutton. (4 marks)
- (c) With the aid of a diagram, describe the procedure for slaughtering a pig. (12 marks)

stunning  
sticking  
bleeding  
washing  
chilling  
parter

18. (a) State **four** roles of each of the following ingredients used in the manufacture of ice cream:
- (i) sucrose; (6 marks)
  - (ii) stabilizers; - improve *look & texture* (4 marks)
  - (iii) emulsifiers. (4 marks)
- (b) State **six** reasons for the ageing process in ice cream manufacture. (6 marks)
19. (a) Describe each of the following methods of manufacturing margarine:
- (i) Batch method; (6 marks)
  - (ii) Votator method. (4 marks)
- (c) Outline the procedure for processing salad dressing in the food industry. (10 marks)

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