NESA NATIONAL EXAMINATION AND SCHOOL INSPECTION AUTHORITY

FOP – Milk Processing Technology

T009

Wednesday, 21/7/2021

08:30 – 11:30 AM

Names:.....

Index number:.....

TVET NATIONAL EXAMINATION, RTQF LEVEL 5, 2020-2021

QUESTIONS and ANSWERS BOOKLET

OPTION/TRADE: **FOOD PROCESSING**

SUBJECT: **Milk Processing Technology**

ACADEMIC YEAR: **2020-2021**

Read carefully the instructions on page (i) & (ii).

FOR EXAMINER'S USE ONLY

QUESTIONS	1	2	3	4	5	6	7	8	9	10	Total
Marks											
QUESTIONS	11	12	13	14	15	16	17	18	19	20	Total
Marks											
QUESTIONS	21	22	23	24	25	26	27	28	29	30	Total
Marks											

TVET NATIONAL EXAMINATION, RTQF LEVEL 5, 2020-2021

INSTRUCTIONS TO CANDIDATES: PART I (Answer Booklet)

1. A candidate should fill in the actual names and the index number on the cover of this questions and answer booklet on the provided place (Black Box).

2. It is illegal for a candidate to write any of his/her names, index number or a school name inside the answer booklet.

3. A candidate should check if all pages of the answer booklet are complete. No candidate should remove or tear any pages or part of it from the answer booklet.

4. A candidate should answer in the language in which the examination is set. (See page ***(ii)***)

5. A candidate should sign on the sitting plan when submitting the answer booklet. He/she has also to check if the answer booklet is well sealed.

6. No extra paper is allowed in the examinations room. If a candidate is caught with it his/her results will be nullified.

7. No candidate is allowed to write answers not related to the subject being sat for, otherwise it will be considered as a cheating case.

8. Write your answers on the 12 lined pages (From page 1 of 12 to page 12 of 12).

9. Use the last non-lined pages as draft.

10. Results for any candidate who is caught in examination malpractices are nullified. The cheating can be recognized during examinations administration, marking exercise or even thereafter.

TVET NATIONAL EXAMINATION, RTQF LEVEL 5, 2020-2021

OPTION/TRADE: FOOD PROCESSING

SUBJECT: Milk Processing Technology

DURATION: 3 hours

INSTRUCTIONS TO CANDIDATES:PART II

The paper is composed of two (2) main Sections as follows:

Section I: Attempt all the Twelve (12) questions **(60 marks)**

Section II: Attempt any Four (4) questions out of Six (6) **(40 marks)**

Allowed materials:

-Ruler and square

-Calculator

Note:

Every candidate is required to carefully comply with the provided assessment instructions.

Section I: Attempt all the Twelve (12) questions **(60 marks)**

(01) Give any five (5) examples of cleaning products that are commonly used in milk processing. **(5 marks)**

(02) Discuss on the requirements to keep a good hygiene in milking practice. **(5 marks)**

(03) Discuss the five (5) most important aspects of maintaining high quality of fresh raw milk. **(5 marks)**

(04) a) Define term "pressing". **(2 marks)**

b) Talk about the techniques used to press curd. **(3 marks)**

(05) The processing of cream and butter has many steps.

a. Explain churning process. **(2marks)**

b. Give the equipment to be used for churning cream. **(1mark)**

c. Give the resulting products of churning process. **(2marks)**

(06) Butter is a product that can be obtained from cream,

a. Differentiate butter from fermented cream and butter from non-fermented cream. **(4 marks)**

b. Give the purpose of starter culture addition in cream. **(1 mark)**

(07) In fermented milk manufacturing, different steps are followed in order to obtain the final product.

a) What is inoculation? **(2 marks)**

b) Give the type of starter culture to be used in Ikivuguto, based on inoculation temperature. **(1.5marks)**

c) Give the type of starter culture to be used in yoghurt, based on inoculation temperature. **(1.5marks)**

(08) Talk about centrifugal cream separation method. **(5 marks)**

(09) Discuss the different effects of P^H on cheese. **(5 marks)**

(10) Describe the main quality factors for cheese. **(5 marks)**

(11) a) Define "adjustment of fat". **(2marks)**

b) Standardize 500kg of milk testing 6.5% fat to 3.1% fat by using skim milk containing 0.05% fat. **(3 marks)**

(12) Outline the factors affecting the milk density. **(5 marks)**

Section II: Attempt any Four (4) questions out of Six (6) **(40 marks)**

(13) Discuss the following terminologies:

a) Adulteration

b) Whey cheese

c) Blowing defect of cheese

d) Cheese wax

e) Bacteriophages. **(10 marks)**

(14) 700 kg of milk containing 3.7 % fat and 300 kg of skim milk containing 0 % fat are taken off from 15000 kg and 2200 kg of milk respectively. The remaining quantities of milk in the two said kinds of milk must be used to make milk fat standardization. Calculate:

a) The quantity of whole milk to be used in standardization. **(2 marks)**

b) The quantity of fat free milk to be used in standardization. **(2 marks)**

c) The fat content of resulting milk from mixing the total quantities of the two kinds of milk. **(6 marks)**

(15) With necessary conditions, give the flow chart of manufacturing Ikivuguto. **(10 marks)**

(16) Outline the functions of the following additives applied in cheese making.

(10marks)

a) $Cacl_2$

b) Saltpeter

c) LAB

d) Annatto.

(17) Discuss the methods of detecting added water in raw milk. **(10 marks)**

(18) A farmer delivers raw milk at collection center. As milk receptionist when testing density, the lactometer reading shows 29 and thermometer indicates 78^0C.

a) Explain different steps of testing milk density.

b) Calculate the specific gravity (density) of delivered raw milk

c) Analyze the obtained result

(10marks)