

**FOP – Hygiene, Waste Management  
and Food Analysis**

**T015**

**Thursday, 29/7/2021**

**08:30 – 11:30 AM**

**Names:**

**Index number**

**TVET NATIONAL EXAMINATION, RTQF LEVEL 5, 2020-2021**

## QUESTIONS and ANSWERS BOOKLET

OPTION/TRADE: FOOD PROCESSING

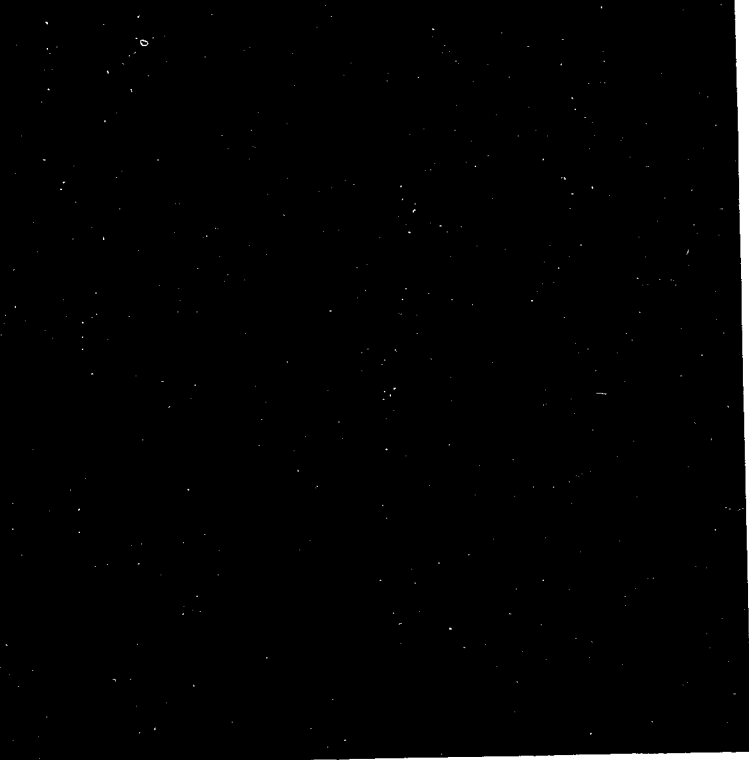
**SUBJECT: Hygiene, Waste Management and Food Analysis**

ACADEMIC YEAR: 2020-2021

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

**FOR EXAMINER'S USE ONLY**

[illegible]



# **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: Hygiene, Waste Management and Food Analysis**

**DURATION: 3 hours**

## **INSTRUCTIONS TO CANDIDATES: PART II (Question paper)**

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)**

1. Define the following terms as applied to area of food microbiology:
  - a) Sampling
  - b) Colony
  - c) Gram stain method.

**(5 marks)**
2. What are the functions of the following?
  - a) Incubator
  - b) Autoclave
  - c) Inoculation loop
  - d) Test tube
  - e) Biosafety cabinet in food microbial analysis.

**(5 marks)**
3. Explain the essential ingredients requirements in culture media composition.

**(5 marks)**
4. According to pH and osmotic pressure requirement, microorganisms are classified in different categories. Discuss on this classification.

**5 marks)**
5. Solid wastes include decomposable and non-decomposable wastes.

Outline:

  - a) 2 examples for decomposable wastes
  - b) 2 examples for non-decomposable wastes
  - c) 1 example of liquid waste.

**(5 marks)**
6. Carbohydrates are one of the food nutrient components, classify them and give one example for each.

**(5 marks)**

7. a) What are materials and equipment used in analysis of moisture content in food? **(3 marks)**
- b) List the major advantage of microwave methods over other drying methods to analyze moisture content in food. **(2 marks)**
8. What are the criteria to be considered while Selecting an Appropriate Technique to be used to analyze the composition of food? (at least ten criteria). **(5 marks)**
9. Explain the following terms pertaining to food analysis. **(5 marks)**
- a) Chemical stability
  - b) Physical stability
  - c) Biological stability
10. Foodborne viruses are caused by ingestion of contaminated food. How are foodborne viruses spread? **(5 marks)**
11. Define cross-contamination and explain the following source of cross-contamination:
- a) Food handler
  - b) Raw food storage
  - c) Utensils. **(5 marks)**
12. Mention five (5) types of food safety hazard and give one example for each. **(5 marks)**

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

**13.** A microbiological analysis of potato purees was done by diluting the sample in 0.1% peptone water, the dilution is conducted in two different ways as follow in the table below. The following table indicates the sequence of dilution process.

Dilutions	Dilution of sample No I	Dilution of sample No II
-1	1/10	2/10
-2	2/20	1/10
-3	50/500	4/10
-4	1/10	1/10
-5	100/1000	1/10

- a) Explain serial dilution. (2 marks)
- b) By using data from table above determine the total dilution for dilution -5 on sample No I and No II. (6 marks)
- c) Among the two dilutions which sample used serial dilution? Explain why. (2 marks)

**14.** During microbiology analysis some time we need microscope.

- a) What are the purposes of making smear and staining in microbiology laboratory analysis of food? (4 marks)
- b) Discuss procedures for preparing smear and Gram Staining. (6 marks)

15. Microorganisms are divided into several types, distinguish those types.

**(10 marks)**

16. Discuss the benefits of composting as one method of solid waste disposal.

**(10 marks)**

17. Suppose you have 3ml of a stock solution of 100mg/ml sodium chloride and you want to make 200microliter (Ml) of solution having 25mg/ml. What is the volume of the stock to use as part of the total volume needed?

**(10 marks)**

18. (a) Briefly, explain the process of washing hand.

(b) As a food processor, indicate when it is particularly needed to wash your hands.

**(10 marks)**





