



# T116

**08:30 – 11:30 AM**

**Names**

**Index number**

TVET NATIONAL EXAMINATIONS, RTOF LEVEL 5, 2020-2021

## QUESTIONS and ANSWERS BOOKLET

## OPTION/ TRADE · PLUMBING

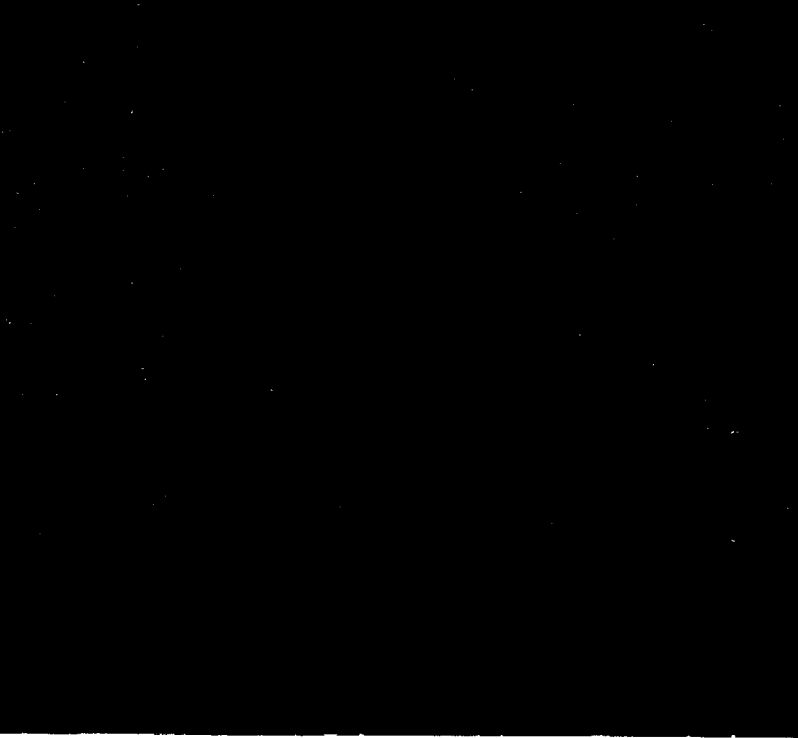
**SUBJECT : Drainage system installation**

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: PLUMBING**

**SUBJECT: Drainage system installation**

**DURATION: 3 hours**

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

The paper is composed of two (2) 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 or 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) Define the following terms:  
a) Drainer  
b) Grade  
c) Manhole  
d) Stack **(5 marks)**
- (02) Distinguish two (2) categories of discharge pipes. **(5 marks)**
- (03) What is the difference between Soil fittings and Waste Fittings? **(5 marks)**
- (04) Calculate the fall in a 50 meter section of foul water pipework if the gradient is to be 1 in 80. **(5 marks)**
- (05) Differentiate the three (3) types of underground drainage and state their advantages. **(5 marks)**
- (06) List any five (5) types of pipe used in drainage system. **(5 marks)**
- (07) Differentiate the septic tank from soak pit basing on their function. **(5 marks)**

- (08) Complete the following Table of drainage pipe size and gradient: **(5 marks)**

Diameter of pipe	Gradient
a) .....	i. ....
b) .....	ii. ....
c) .....	iii. ....
d) .....	iv. ....
e) .....	v. ....

- (09) List down any five (5) types of gutter used in rain water harvesting. **(5 marks)**
- (10) Mention any five (5) Criteria to be considered while selecting rainwater harvesting technologies. **(5 marks)**
- (11) Write down any five (5) processes for installing rain water pipes. **(5 marks)**
- (12) A Department of 30 rooms is occupied by 60 tourists for 1 year, 1 tourist consumes 25 litres per day. Calculate the water demand to comfort all tourists accommodated in this department. **(5 marks)**

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

**(40 marks)**

- (13)** Explain working principles of septic tank. **(10 marks)**
- (14)** Explain the following elements:
- a) Evaporation.
  - b) Capillary action.
  - c) Wind.
  - d) Momentum. **(10 marks)**
- (15)** Discuss regulations governing a drainage system in Rwanda. **(10 marks)**
- (16)** Identify any ten (10) principles of digging trenches in drainage system. **(10 marks)**
- (17)** Differentiate separate system from combined system of drainage. **(10 marks)**
- (18)** a) Identify rainwater movement on earth surface
- b) State any five (5) factors affecting the movement of water. **(10 marks)**

***Do not write anything on this page !***





