

073105T4PLM

PLUMBER LEVEL 5

CON/OS/PL/CR/03/5/A

INSTALL DRAINAGE SYSTEMS

July/August 2024



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

WRITTEN ASSESSMENT

TIME: 3 HOURS

INSTRUCTIONS TO CANDIDATE:

1. This paper consists of two sections; **A** and **B**
2. Answer **ALL** the question as guided in each section
3. Marks for each question are as indicated in the brackets
4. You are provided with a separate answer booklet to answer the questions
5. Do not write in this question paper

This paper consists of FOUR (4) printed pages

Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing

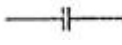
SECTION A (40 MARKS)

Answer ALL questions from this section.

1. Construction drawings are detailed plans that guides the construction of building structure.

State TWO types of drawings used in construction sites in Kenya. (2 Marks)

2. Using plumbing symbols in working drawings facilitates clear and effective communication among plumbers. Identify the following symbols used in plumbing works. (4 Marks)

i. 

ii. 

iii. 

iv. 

3. The choice of pipe material depends on specific requirement of pipe application. List FIVE materials commonly used in drainage works? (5 Marks)

4. Name TWO PPEs commonly worn during drainage works. (2 Marks)

5. Maintaining drainage tools is essential for ensuring the efficient and effective management of drainage systems. Explain THREE ways of maintaining drainage tools in the construction site in Kenya today. (6 Marks)

6. Before handing over any job, tests must be done to evaluate the systems functionality. State THREE functionality tests conducted in drainage works. (3 Marks)

7. Standard unit of measurement provide a consistent way to communicate and compare measurements. State the minimum diameter of discharge pipes for baths, basins and sinks. (3 Marks)

8. Define the following terms used in drainage systems.

i. Induced siphonage. (2 Marks)

ii. Compression. (2 Marks)

9. Setting out is the process of transferring the construction design measurements to the ground. State TWO ways of setting out the drainage systems. (2 Marks)

10. Developing a correct schedule of materials before installing a drainage system will help a plumber overcome major installation challenges. Identify THREE reasons why it is important to develop a schedule of materials before installing a drainage system. (3 Marks)
11. Open mounting of drainage pipes refers to installing drain pipes in a way that they are exposed to the open air. State THREE advantages of open mounting of drainages pipes. (6 Marks)

SECTION B (60 MARKS)

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

12. Safety and healthy practices are a set of guidelines that protect overall well-being in various environments.
- a. Describe FIVE safety and healthy practices observed during excavation of drainage systems. (10 Marks)
 - b. Trap seal loss is the reduction of water seal in a plumbing trap. Explain FIVE main causes for the loss of trap seal. (10 Marks)
13. One major disadvantage of drainage fault is the potential negative impact on properties.
- a. State and explain FIVE faults associated with drainage systems. (10 Marks)
 - b. With an aid of well labeled diagrams sketch FIVE hand tools used to install drainage systems. (10 Marks)
14. A drainage system is an infrastructure network designed to collect and transport waste water away from the building.
- a. Explain FIVE installation requirements you would apply while installing underground drainage system. (10 Marks)
 - b. Explain FIVE factors to consider when constructing an inspection chamber for the system. (10 Marks)
15. “One pipe system” of above ground drainage is designed to simplify plumbing installation and ensures efficient removal of wastewater in storey buildings. With an aid of a well labelled diagram, describe the “one pipe system” of above ground drainage for a two-storey building? (20 Marks)

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