

073204T4PLM

PLUMBING LEVEL 4

CON/OS/PL/CR/03/4/A

Install Drainage System

Nov/Dec 2024



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

WRITTEN ASSESSMENT

Time: 2 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 FIVE (5) 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 (10 MARKS)

Answer all questions in this section. Each question carries one mark

1. Manholes are constructed in various sizes depending on the purpose. What is the size of the manhole generally constructed within the compound for house drainage?
 - A. $90 \times 70\text{cm}$.
 - B. $90 \times 80\text{cm}$.
 - C. $90 \times 60\text{cm}$.
 - D. $90 \times 90\text{cm}$.
2. Drainage is the system or process by which water or other liquids are drained from a place. What is the term given to the waste water from kitchen sinks?
 - A. Grey water.
 - B. Black water.
 - C. Yellow water.
 - D. Brown water.
3. Siphonic action is a cohesive force that prevents the column of the liquid from separating under their own weight. What causes the siphonic action in soil pipes?
 - A. Leaked air.
 - B. Foul air.
 - C. Sucked air.
 - D. Air diffuser.
4. Siphonic drainage systems are particularly useful for large flat roofs where effective and quick drainage is essential. Which one of the following is the correct device installed to overcome siphonic action?
 - A. Anti Siphonage pipe.
 - B. Vent pipe.
 - C. Coupler.
 - D. Vent cowl.
5. In a plumbing system, drainage is a critical component responsible for managing the discharge of soil and waste stacks from a building. What is the name of this type of a drain?
 - A. Main drain.

- B. Soil drain.
 - C. Waste drain.
 - D. House drain.
6. Drainage systems in buildings vary according to the design and site conditions. Which one of the following is an example of above drainage system in a storey building?
- A. Partially separate.
 - B. Single stack system.
 - C. Combined system.
 - D. Separate system.
7. Different sizes of the pipe are used in drainage installation depending on the appliance installed. What is the size of the flush pipe for low level flushing cistern?
- A. 38mm.
 - B. 32mm.
 - C. 25mm.
 - D. 50mm.
8. Various instruments used for testing leakages in a drainage system. Which instrument is used while conducting air test in pipe line?
- A. Manometer.
 - B. Vinometer.
 - C. Thermometer.
 - D. Tint meter.
9. A device is a tool designed to perform a specific function. Which device is installed in a drainage system to prevent reverse flow?
- A. Back water valve.
 - B. Back flow preventer.
 - C. Back Siphonage.
 - D. Back vent pipe.

10. Sewer line is a connection of waste pipes that carries away sewage or surface water from buildings to sewer collection point. State one condition under which a sewer pipe is laid.
- A. Cushion.
 - B. Trench.
 - C. Length.
 - D. Threading.

SECTION B (40 MARKS)

Answer ALL questions in this section.

11. A manhole is a unit constructed underground to provide access to the utilities like a sewer system. State FOUR situations that require the installation of manholes. (4 Marks)
12. Understanding the fundamental functions of a drainage system is essential in plumbing practice. Give SIX purposes of a building drainage system? (6 Marks)
13. Ventilation in drainage system plays a crucial role in ensuring the comfort and safety of a building occupant. State THREE methods of ventilating drainage systems. (3 Marks)
14. A good drainage system ensures that water is directed away from buildings efficiently. Give FOUR characteristics of good drainage systems. (4 Marks)
15. Good designs are required during construction of drainage systems. Highlight THREE design requirements for above ground drainage system in a multi-storey building. (3 Marks)
16. Understanding the regulations and by laws governing manhole construction is crucial for ensuring safe and complaint drainage system. State THREE by laws pertaining to manhole construction. (3 Marks)
17. When designing and installing a fully vented drainage system it is essential to adhere to the relevant building code requirements. Highlight THREE by law requirements related to the soil, waste, and vent stack. (3 Marks)
18. When installing drainage system, a plumber must consider the various sanitary appliances connected to the system, each serving different purposes.
- a. Define sanitary appliance. (1 Marks)
 - b. State TWO categories of sanitary appliance given an example in each. (4 Marks)
19. Jane has recently completed the construction of a storey building now she requires a professional plumber to install an inspection chamber. This critical component of the

drainage system allows easy access and maintenance of the underground drainage.

Illustrate the procedures of constructing an inspection chamber. (5 Marks)

20. Mr. Njagi has completed the construction of an inspection chamber in a residential house.

What would be the procedures of him conducting housekeeping correctly? (4 Marks)

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