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073105T4PLM

PLUMBING LEVEL 5

CON/OS/PL/CR/02/5

Install Rainwater Harvesting and Disposal

July/August 2025

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 questions in section **A** and any **THREE** in section **B**.
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 THREE (3) printed pages

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

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SECTION A (40 MARKS)

Answer ALL questions in this section.

1. To manage rainwater runoff from the roof of a building, gutters are crucial to be installed. List TWO materials that can be used to make a gutter. (2 Marks)
2. During installation of rainwater goods correct procedures should be followed. State TWO importance of installing a first-flush diverter in a rainwater harvesting system. (2 Marks)
3. Rain water harvesting components come in different types and sizes. Identify TWO roles of filters in a rainwater harvesting system (2 Marks)
4. In plumbing works, there are several materials used for making rainwater goods. Give THREE materials best suited for rainwater storage tanks. (3 Marks)
5. Sheets need to be joined together securely to form a continuous surface. Give TWO types of joints that can be used to join two pieces of sheet metal when fabricating a flat gutter. (2 Marks)
6. When carrying out plumbing works safety of a plumber is paramount as they often work in environments with various hazards. List FOUR safety gears needed by plumbers when fixing rain water equipment. (4 Marks)
7. Rainwater disposal is a very important factor to be considered in any residential buildings. Identify THREE key methods used for rainwater disposal. (3 Marks)
8. Estimating and costing of any project is a critical aspect done before plumbing works commences in the work place. List FOUR reasons for estimating and costing. (4 Marks)
9. The choice of the material used plays a major role when making rain water good as it enhances durability and effectiveness. List FOUR disadvantages of plastic pipes. (4 Marks)
10. When carrying out plumbing works it is ideal for a plumber to choose the right type of application to perform various projects. State THREE types of rainwater drains(3 Marks)
11. Accidents could happen if safety procedures are not followed. Give FOUR safety precautions needed when testing elevated rainwater goods. (4 Marks)
12. Different clients have different opinions on how they prefer to harvest rainwater. List FOUR types of rainwater harvesting systems. (4 Marks)
13. Upon the completion of installation of rainwater equipment, it is essential to conduct its effectiveness. State THREE reasons for testing rainwater tanks for structural integrity before use. (3 Marks)

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SECTION B: (60 MARKS)

Answer any THREE questions in this section.

14.

a. In order to avoid damages in an existing building, correct procedure is a fundamental aspect which should be adhered to by plumbers. Describe FIVE procedures for removing old gutters from your house. (10 Marks)

b. Accidents and injuries can be reduced while performing any task in a construction site. Explain FIVE advantages for proper maintenance of rain water goods tools and equipment. (10 Marks)

15.

a. Proper interpretation of plumbing drawings showing rainwater harvesting layouts is a very crucial aspect to be considered before executing any work. Describe FIVE benefits of correct interpretation of these drawings. (10 Marks)

b. John was performing a task on rainwater system installation. Upon his completion he noticed a pressure drop in the system. Discuss FIVE key procedures he will perform to carry out an air pressure test on a sealed rainwater system. (10 Marks)

16.

a. Leakages in construction can have serious consequences and could affect the structural functionality of rainwater goods if not properly addressed. Explain FIVE faults which might be encountered in rainwater system. (10 Marks)

b. Plumbers should perform housekeeping procedures to ensure a clean working environments for all users in a workshop. Explain any FIVE ways of keeping the working area safe and healthy. (10 Marks)

17.

a. A good rainwater harvesting system, is designed to effectively capture, collect and harvest rainwater. Explain FIVE challenges that could arise if unsuitable surfaces are used for harvesting. (10 Marks)

b. Work should be inspected during installation and tests applied upon completion. Describe FIVE importance of conducting inspections before using any plumbing system (10 Marks)