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073105T4PLM

PLUMBING LEVEL 5

CON/OS/PL/CR/ 0.1/ 5

Install Water Supply System

July/August 2025

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

WRITTEN ASSESSMENT

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Time: 3 HOURS

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INSTRUCTIONS TO CANDIDATE

1. Marks for each question are indicated in the brackets.

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2. The paper consists of **TWO** sections: **A** and **B**.

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3. Answer **All** questions in section **A** and any **Three** in section **B**.

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4. Candidates are provided with a separate answer booklet

5. **DO NOT** write on this que

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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.**

SECTION A (40 MARKS)

1. Valves are essential components that control the flow of fluids through a piping system.

State the use of the following.

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a) Check valve. (2 Marks)

b) Butterfly valve. (2 Marks)

2. PPR pipes are a plastic piping widely used for plumbing and water supply

systems. State THREE advantages of using PPR pipes over GI pipes. (3 Marks)

3. Pipe fittings are components used in sections of piping. State the function of the following pipe fittings.

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a) Elbow. (1 Mark)

b) Tee. (1 Mark)

c) Couplings. (1 Mark)

d) Bushings. (1 Mark)

4. Pipe bursts can lead to serious water damage if not quickly addressed. Name FOUR

potential risks in a pipe line. (4 Marks)

5. Plastic materials are widely used in plumbing installations more than metallic. List

FOUR advantages of plastic materials in plumbing. (4 Marks)

6. Material quantification is the process of determining the types, quantities, and sizes of materials needed to complete a plumbing job.

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a) Identify the steps taken in material quantification. (4 Marks)

b) Outline FOUR consequences of inaccurate material quantification in plumbing

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projects. (4 Marks)

7. Pipework tools are essential for cutting, joining, and shaping

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plumbing system. State THREE challenges that arise from the incorrect use of pipework tools in plumbing projects. (3 marks)

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8. Water storage in residential buildings is very critical so as to serve the various large holds in the building. List THREE advantages of providing cold water storage in

buildings. (3 Marks)

9. Personal protective equipment are major requirements while working in the field or

workshop. Outline THREE benefits of using PPEs. (3 Marks)

10. Pipework tools and equipment are cared for and maintained based on manufacturers

manual and workplace policy. State THREE reasons for maintaining pipework tools and equipment. (4 Marks)

SECTION B (60 MARKS)**Answer Any THREE Questions in This Section**

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11. A material schedule is a table that lists all the materials required for a plumbing project.

a) Explain FIVE benefits of a material schedule in plumbing projects. (10 Marks)

b) Discuss FIVE factors that should be considered when choosing materials in plumbing system. (10 Marks)

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12. Quantifying and costing materials in plumbing is a key part of project planning and management.

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a) Discuss FIVE benefits of accurately quantifying and costing materials in plumbing projects. (10 Marks)

b) Explain FIVE key elements that should be included in a simple plumbing drawing. (10 Marks)

13. Positions of pipes are set out and marked based on working line diagrams from plumbing

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a) Explain the procedures of installing the pipes on the wall from the plan. (10 Marks)

b) Outline the procedure bending a pipe using a hyd. (5 Marks)

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c) Discuss the procedure of cutting G.I pipe by use of a hacksaw while installing in a building premises. (5 Marks)

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a) Leakage in pipes may occur due to different causes. Discuss FIVE causes of pipe leakages. (10 Marks)

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b) PVC pipes require heating and bending when there is need for change in direction.

Explain the procedure of a PVC pipe. (10 Marks)

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