

Date: 31.07.2025 11:27 AM

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BUILDING TECHNICIAN LEVEL 6**CON/OS/BUT/CC/03/6**

Printed By: Technical And Vocational College

Apply Building Materials Science

Date: 31.07.2025 11:27 AM

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**INSTRUCTIONS TO CANDIDATE**

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1. Marks for each question are indicated in the bracket's.
2. The paper consists of **TWO** sections: **A** and **B**.
3. Candidate answer booklet
4. **DO NOT** write on this question paper.

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This paper consists of FOUR (4) printed pages.**And the question paper to ascertain that all pages are printed as**

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indicated and that no questions are missing.

SECTION A (40 MARKS)*Answer ALL the questions in this section.*

1. Building stones have construction for thousands of years. State any **THREE** types of sedimentary rocks. (3 Marks)
2. Roof covering is an essential element of a superstructure in a building. State any **FOUR** roof covering materials most commonly used. (4 Marks)
3. Construction materials are required to be subjected to test before, or during the construction. List **FOUR** test parameters that are identified during testing. (4 Marks)
4. Cementitious materials are used to bond other materials during construction. Name **THREE** types of cementitious materials. (3 Marks)
5. Glass is one of the essential construction materials used in the construction industry. Outline **THREE** uses of glass in construction. (3 Marks)
6. Obtaining and interpreting bills of quantities and working drawings is a fundamental step in any construction project. State **THREE** importance of interpreting BOQs and working drawings. (3 Marks)
7. Construction material selection is determined by construction requirements and project scope. Identify any **FOUR** reasons why material selection is dependent on requirements and scope. (4 Marks)
8. Plastics are broadly classified as either thermoplastics or thermosetting plastics. State **FOUR** properties of plastics. (4 Marks)
9. Clay product glazing treatments are methods used to apply and manipulate glaze on the surface. List **THREE** glazing treatments given to clay products. (3 Marks)
10. Heat treatment is the process of heating a metal at a specific temperature, holding it there for a period, and then cooling it at a controlled rate. Identify **FOUR** purposes of heat treatment. (4 Marks)
11. Timber conversion is a process between felling trees and using timber. Identify **TWO** purposes of timber conversion. (2 Marks)
12. To ascertain the required properties of stones, tests are undertaken to establish different properties. Outline any **THREE** types of building stone tests. (3 Marks)

SECTION B (60 MARKS)

Answer *THREE* Questions in This Section

13. Selecting quality is crucial for ensuring the longevity, safety and overall success of any building project.

a. Describe TWO ways in which quality in each of the following materials can be achieved. (12 Marks)

i. Concrete

ii. Steel

iii. Wood

b. Explain FOUR activities undertaken upon the procurement of construction materials. (8 Marks)

14. Building stones are mostly cut, shaped and used in construction for structural or decorative purposes.

a. Describe the geological formation of the following rocks. (4 Marks)

i. Igneous rocks

ii. Metamorphic rocks

b. Explain any THREE factors that lead to the deterioration of building stones.

(6 Marks)

c. Describe the processes of quarrying stones by b. (10 Marks)

15. Paint and varnishes are liquid or paste coating applied to surfaces of plaster, timber or steel for protection, decoration and durability.

a. List FIVE constituents of paint. (10 Marks)

b. Explain any FIVE uses of varnishes. (10 Marks)

16. You are a building technician tasked with supervising the construction of a commercial building with roof trusses made of timber.

a. Explain any TWO methods of truss timber. (4 Marks)

b. Describe any THREE types of timber conversion methods. (6 Marks)

c. Sketch a section of the cellular structure of a tree trunk showing growth rings of even parts of the tree trunk. (10 Marks)