

**073206T4BLD**

**BUILDING TECHNICIAN LEVEL 6**

**CON/OS/BUT/CC/03/6/A**

**APPLY BUILDING MATERIALS SCIENCE**

**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**. Attempt questions in each section as per instructions given in the section.
2. You are provided with a separate answer booklet.
3. Marks for each question are indicated in the brackets.
4. Do not write on the 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.*

**SECTION A: (40 MARKS)**

*Answer **all** the questions in this section.*

1. Bill of quantities is an essential document when carrying out construction. List any three key components included in a bill of quantities. (3 marks)
2. Cost of materials is a criterion to consider when selecting quality of construction materials. Highlight any five factors that should be considered when evaluating the cost implications of construction material. (5 marks)
3. Quality of a construction materials enhances the success of a project. State any three benefits of good quality construction materials. (3 marks)
4. Concrete blocks are broadly used in modern construction industry. Outline the steps involved in manufacturing concrete blocks. (5 marks)
5. Construction materials are subjected to laboratory tests. Describe any two common tests conducted and their purposes. (6 marks)
6. Bags of cement can cause a risk to the health of construction workers. Identify any three safety requirements when handling cement bags on a construction site. (3 marks)
7. Differentiate between random sampling and systematic sampling in testing construction materials. (4 marks)
8. As a building technician identify any four significances of essential construction materials based on project scope and construction requirements. (4 marks)
9. Differentiate between tensile strength and compressive strength in construction materials. (4 marks)
10. Briefly explain any three advantages of proper assembling of construction materials, tools, and equipment in the construction process. (3 marks)

**SECTION B: (60 MARKS)**

*This section consists of four (4) questions.*

*Answer any **THREE (3)** questions. All questions carry equal marks.*

11. The building team requires contract documents for effective execution of works.
- Discuss any five significances of bills of quantities and working drawings in identifying essential construction materials. (10 marks)
  - Explain five factors to consider when evaluating and selecting quality construction materials, with a focus on cost implications and project requirements. (10 marks)
12. You have been tasked to receive construction materials that will be used in a building workshop for CBET practical assessments:
- Discuss the steps involved in handling construction materials safely, basing on:
    - Assessing safety requirements. (6 marks)
    - Implementing safe handling practices. (6 marks)
  - Explain two advantages of each step in ensuring workplace safety. (8 marks)
13. In the selection of construction materials, determining the properties is paramount.
- Describe three chemical properties of construction materials. (6 marks)
  - Explain three essential construction materials commonly used in residential construction and explain their primary uses. (6 marks)
  - Describe two physical properties and two mechanical properties of timber commonly assessed in construction. (8 marks)
14. Some construction materials such as asbestos can prove to be hazardous.
- Briefly explain any five benefits of safety protocols when handling such materials. (10 marks)
  - Discuss any five necessary precautions to ensure safe handling and disposal of asbestos. (10 marks)

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