

073205T4BLD

BUILDING TECHNOLOGY LEVEL 5

CON/OS/BUT/CR/2/5

Execute Building Substructure Works

March/ April 2026



**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** questions in section A and **ANY THREE** (3) questions in section B.
3. Marks for each question are indicated in the brackets.
4. Candidates are provided with a separate answer booklet
5. Do not write on the question paper.

This paper consists of THREE (3) printed pages

Candidate 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 questions in this section

1. You are assigned to carry out trench excavation on a construction site. Outline FOUR ways in which the type of soil is determined before excavation begins. (4 Marks)
2. Foundation trenches depth influences structural integrity of a building. State FOUR importance of the structural engineer's specifications when determining the depth of a foundation trench. (4 Marks)
3. Different soil types require suitable tools and equipment for effective excavation. List FOUR tools and equipment used in this process. (4 Marks)
4. Excavated trenches can pose hazards to workers. Identify FOUR reasons why barriers must be erected after excavating a foundation trench. (4 Marks)
5. Trench excavation must reach a specific quality standard before the substructure is cast. State FOUR importance levelling foundation trenches prior to concreting. (4 Marks)
6. Planking and strutting are vital support systems during construction. Identify FOUR suitable materials used in planking and strutting. (4 Marks)
7. Spacer blocks are crucial components when reinforcing concrete. Outline FOUR purposes of using spacer blocks during reinforcement of concrete foundations. (4 Marks)
8. Concrete testing helps in selecting quality concrete. Describe TWO ways in which concrete is tested according to construction regulations. (4 Marks)
9. A properly constructed foundation wall transfers building loads safely to the ground. Identify FOUR construction requirements that ensure a foundation wall meets building specifications. (4 Marks)
10. Dampness is a major threat in the construction industry. State FOUR significance of damp proofing materials in the construction of a solid ground floor. (4 Marks)

SECTION B (60 MARKS)

Answer any THREE (3) questions from this section.

11. Excavation of foundation trenches must be executed carefully to ensure stability and safety on site.
- a. Discuss SIX factors that influence the choice of excavation method. (12 Marks)
 - b. Explain FOUR safety measures that should be observed during excavation to prevent accidents and structural failure. (8 Marks)
12. Concreting ensures adequate strength and durability of the foundation structure.
- a. Elaborate FIVE causes of defects associated with solid ground floors. (10 Marks)
 - b. Discuss FIVE corrective measures to defects associated with solid ground floors. (10 Marks)
13. The construction of foundation walls involves careful alignment and bonding to ensure the stability of the structure above.
- a. Explain FOUR importance of proper curing in enhancing lifespan of the ground floor concrete slab. (8 Marks)
 - b. Discuss THREE factors to consider when selecting suitable damp proofing materials for solid ground floor construction. (6 Marks)
 - c. Discuss THREE backfilling methods that ensure durability of the foundation wall. (6 Marks)
14. A well-constructed solid ground floor contributes to the comfort, durability, and moisture resistance of a building.
- a. Analyze FOUR properties of materials that influence the strength of a solid ground floor. (8 Marks)
 - b. State TWO significance of termite treatment in construction. (2 Marks)
 - c. Discuss FOUR site conditions that affect the durability of the ground floor. (8 Marks)

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