073206T4BLD

BUILDING TECHNOLOGY LEVEL 6

CON/OS/BUT/CC/05/6/A

Execute Building Temporary Works

March/April 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. Attempt 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

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)

Attempt ALL the questions in this section.

1. The choice of materials for the formwork can significantly affect the quality and cost of the project. List THREE common materials used for formwork construction. (3 Marks)
2. During the renovation of a building, workers realize that the walls require temporary support. Mention FOUR situations where shoring is necessary. (4 Marks)
3. While excavating for a drainage system, the team encounters soil that requires immediate reinforcement. Name FOUR components of a timbering system used in trench excavation. (4 Marks)
4. A scaffold for a high-rise project where horizontal stability is critical is comprised of several parts. Define the term ledger in scaffolding. (2 Marks)
5. A construction team is tasked with installing shoring between two adjacent buildings. Outline THREE functions of flying shoring. (3 Marks)
6. During a sewer line excavation, the construction team encounters limitations while carrying out timbering. List THREE limitations of timbering in deep trench construction. (3 Marks)
7. Accidents occur on construction sites due to failure of shoring systems. Record FOUR common causes of failure in shoring systems. (4 Marks)
8. At a busy construction site, a team debates the usefulness of trench timbering. State THREE purposes of trench timbering. (3 Marks)
9. In a city project, engineers are tasked with stabilizing a wall and must decide whether to use dead shoring or raking shoring. Differentiate between the TWO types of shoring. (4 Marks)
10. While excavating in a soft soil near a riverbank, a contractor suggests using a close sheeting on the trench walls. Explain the term close sheeting. (2 Marks)
11. During the construction of a storey building, engineers are tasked with the installation of raking shores. Outline FOUR functions of raking shores in structural support. (4 Marks)
12. A scaffold functions through the integration of various components. List FOUR structural components of a scaffolding system. (4 Marks)

SECTION B (60 MARKS)

Attempt Any THREE Questions in This Section

13. A construction crew is tasked with digging a 3-meter-deep trench in a busy urban area, requiring them to use timbering to prevent soil collapse.
    a) Explain the step-by-step process of trench timbering for a 3-meter-deep trench. (10 Marks)
    b) Discuss FIVE advantages of using timbering over other support systems. (10 Marks)
14. To construct a multi-storey building, contractors must decide on the best scaffolding type to ensure safety and efficiency at various heights.
    a) Describe FIVE types of scaffolding suitable for constructing a multi-storey building. (10 Marks)
    b) Explain FIVE key safety measures to observe during scaffolding erection and dismantling. (10 Marks)
15. While preparing to cast a reinforced concrete beam, a site manager must ensure that all the functional requirements of formwork are met.
    a) Explain SIX requirements for proper formwork construction in beam casting. (12 Marks)
    b) Discuss FOUR factors to consider when selecting formwork materials. (8 Marks)
16. After completing a temporary support project, the team must dismantle the shoring system while ensuring safety and avoiding structural damage.
    a) Describe the procedures for dismantling a shoring system after construction. (10 Marks)
    b) Explain the process of installing a flying shore to support adjacent buildings during excavation. (10 Marks)