061906T4TEL

TELECOMMUNICATION ENGINEERING LEVEL 6

ENG/OS/TLE/CR/01/6/A

Perform Electrical Installation

July/August 2025

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

WRITTEN ASSESSMENT

Time: 3 HOURS

INSTRUCTIONS TO CANDIDATE

1. The paper consists of **TWO** sections: **A** and **B**.
2. Marks for each question are indicated in the brackets.
3. Candidates are provided with a separate answer booklet.
4. **DO NOT** write on this question paper.

This paper consists of FOUR (4) 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** questions in this section.*

1. List FOUR work health and safety procedures applied during electrical installation. (4 marks)
2. Outline THREE steps involved in preparing a working drawing for an electrical installation. (3 marks)
3. Name TWO standards applied when designing an electrical installation to ensure compliance in Kenya. (2 marks)
4. Explain TWO factors considered when determining the size of cables for an electrical installation. (4 marks)
5. List THREE logistical considerations for efficient execution of an electrical installation task. (3 marks)
6. State FOUR components included in a survey report for an electrical installation site. (4 marks)
7. Describe TWO methods used to take accurate measurements at an electrical installation site. (4 marks)
8. Explain the importance of installation planning in relation to the scope of work. (2 marks)
9. Outline TWO differences between a single pole switch and a double pole switch (4 marks)
10. Outline TWO factors considered when calculating the load for an electrical installation. (4 marks)
11. Explain the purpose of balancing phases in an electrical installation. (2 marks)
12. Name TWO IEE regulations related to the installation of cables and accessories. (2 marks)
13. Explain ONE factor that determines the type of wiring system to be used in an installation. (2 marks)

SECTION B: (60 MARKS)

*Answer any **THREE** questions in this section.*

14.

a) Explain FOUR steps involved in performing an electrical design as per the installation scope. (8 marks)

b) Describe the procedure for terminating cables in accordance with IEE regulations (8 marks)

c) State TWO types of protective devices used in electrical installations. (4 marks)

15.

a) Outline FOUR reasons why a site survey is conducted before an electrical installation. (8 marks)

b) Explain THREE factors that influence the selection of equipment for an electrical installation. (6 marks)

c) Outline THREE components of a single-phase distribution system with three lighting points. (6 marks)

16.

a) Describe FOUR tests conducted to verify the safety and functionality of a completed electrical installation. (8 marks)

b) Explain TWO methods used to document test results for an electrical installation. (4 marks)

c) Outline THREE IEE regulations concerning the termination of cables in a conduit system. (8 marks)

17.

a) Describe TWO tools used for taking measurements at an electrical installation site. (4 marks)

b) A 15-meter PVC-insulated cable supplies a 4kW, 240V load in a domestic installation. Calculate the minimum cable size to comply with IEE regulations (use a diversity factor of 25%). (8 marks)

c) Explain FOUR factors considered when balancing phases in a three-phase electrical installation (8 marks)

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