

071306T4EEN

ELECTRICAL ENGINEERING (POWER OPTION) LEVEL 6

ENG/OS/PO/CR/01/6

Perform Electrical Installation

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. 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 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 the questions in this section.

1. Fire extinguishers are used to put off fire, outline FOUR types of fire extinguishers used. (4 marks)
2. Identify ONE suitable tool used for cutting and ONE suitable tool used for threading a steel conduit. (2 marks)
3. List FOUR Occupational Health and Safety Act (OSHA) requirements during an electrical installation. (2 marks)
4. Name FOUR causes of accidents that may occur in an electrical workshop. (2 marks)
5. Kenya power standards and procedures govern different types of installation. State the TWO types of installations. (2 marks)
6. Cables are typically connected to a device or equipment from the end of the cable. List TWO types of cable terminations. (2 marks)
7. Use of PPE is paramount at an electrical workshop. Define PPE and give TWO examples of PPEs. (4 marks)
8. In any workplace, fire accidents can occur if safety measures are not put in place. State three common causes of electrical fire accidents. (3 marks)
9. Define the following terms as used in electrical installation:
 - a. Cable coupler (2 marks)
 - b. Cable ducting (2 marks)
10. Define the following as used in electrical installation. (6 marks)
 - a. Earth
 - b. Earthing
 - c. Bonding conductor
11. Outline any FOUR IEE regulations when installing a building in a caravan site. (4 marks)
12. Name FOUR types of cable joints used during an electrical installation. (2 marks)
13. State THREE factors to be considered in sizing of cable conductors. (3 marks)

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SECTION B (60 MARKS)

Answer any THREE questions in this section

14.

- a) Tests in electrical installation are done after installation. Explain the following types of tests. (12 marks)
- i. Insulation resistance test.
 - ii. Earth continuity test
 - iii. Loop impedance test
 - iv. polarity test
- b) Draw a well labelled circuit diagram of Earth Leakage Circuit Breaker. (8 marks)

15.

- a) The designer of an electrical installation must ensure that the design meets the IEE Wiring Regulations for electrical installations. Explain FOUR qualities of a good electrical installation engineer. (8 marks)
- b) Employees have a duty to mind their safety and that of others. Explain any four safety measures to be observed before starting any electrical installation. (8 marks)
- c) Outline FOUR factors affecting the choice of an electrical wiring system. (4 marks)

16.

- a) Fires are divided into different classes, briefly explain FOUR classes of fire. (8 marks)
- b) There are descriptions of some first aid procedures which should be practiced under expert guidance emergency. Explain the procedure when the following accidents occur. (8 marks)
- i. Burns
 - ii. Broken bones
 - iii. Shock
 - iv. Exposure to toxic fumes
- c) Describe the procedure followed when a person is electrocuted. (4 marks)



17. Figure 1 shows an architectural drawing for an electrical installation. You are required to:
- a) Prepare a bill of quantities and list TWO omissions in the diagram. (15 marks)

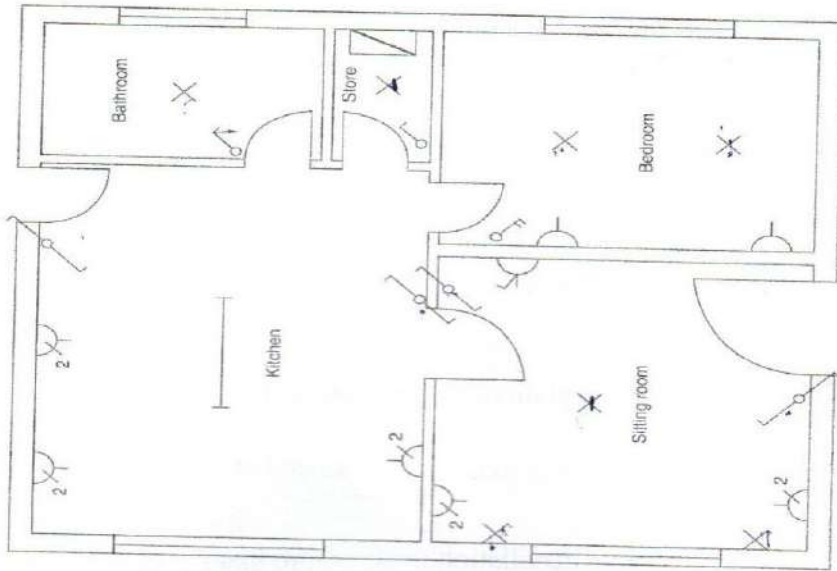


Figure 1

- b) Outline FIVE steps to be followed to successfully find faults in an electrical installation. (5 marks)



$$\begin{array}{r}
 1800 \\
 1400 \\
 \hline
 9200 \\
 1200 \\
 \hline
 10400 \times \frac{36}{100}
 \end{array}$$

$$\begin{array}{r}
 1040 \\
 31 \\
 \hline
 3120
 \end{array}$$