

071306T4EEN

ELECTRICAL ENGINEERING (POWER OPTION) LEVEL 6

ENG/OS/PO/CR/01/6

Perform Electrical Installation

November/December 2025



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

WRITTEN ASSESSMENT

TIME: 3 HOURS

INSTRUCTIONS TO CANDIDATE

1. Marks for each question are indicated in the brackets.
2. Attempt **ALL** questions in section A and **ANY THREE** (3) questions in section B.
3. The paper consists of **TWO** sections: **A** and **B**.
4. Candidates are provided with a separate answer booklet
5. **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)

Attempt ALL questions in this section.

1. In electrical workshops, safety is regulated by law to protect workers and clients. State TWO importance of Occupational Safety and Health Act (OSHA) in electrical installation. (2 marks)
2. Fires caused by electrical faults require proper extinguishing agents. Identify FOUR types of fire extinguishers and the classes of fire they are applied to. (4 marks)
3. Different environments require different installation standards. State the difference between domestic and industrial electrical installations. (4 marks)
4. Electrical circuits are safeguarded by different protective devices. Identify TWO differences between a fuse and a miniature circuit breaker (MCB). (4 marks)
5. Selecting the right tool to perform electrical installation is essential as per the requirements of IEEE standards. State the recommended work for the following tools:
 - a) Stripping knife
 - b) Tape measure
 - c) Phase tester (3 marks)
6. Preventing electric shock is a core part of safety design. Outline the purpose of earthing in electrical installations. (4 marks)
7. A variety of devices are used to protect circuits and appliances. State THREE types of protective devices used in electrical installation. (4 marks)
8. Various wiring systems have advantages and disadvantages. State TWO advantages of conduit wiring over cleat wiring. (4 marks)
9. In parallel connection, all lamps are connected across the supply. List FOUR advantages of lamps connected in parallel. (4 marks)
10. Managing work activities requires proper time planning. Define the term 'work schedule' and provide two examples. (4 marks)
11. Making a cable joint requires consideration of IEE standards to enhance good conductivity and safety purposes. State THREE standards to be considered. (3 marks)

SECTION B (60 MARKS)

Attempt **THREE** questions only in this section

12.

a) Fuses are used as a means of protection against excess currents in conductors.

Explain the following as used in fuses.

- i. Fusing current
- ii. Fusing factor (4 marks)

b) The cables used for high-voltage power distribution require termination and installation expertise beyond the normal experience of a contracting electrician.

Figure 1 shows such a type of cable.

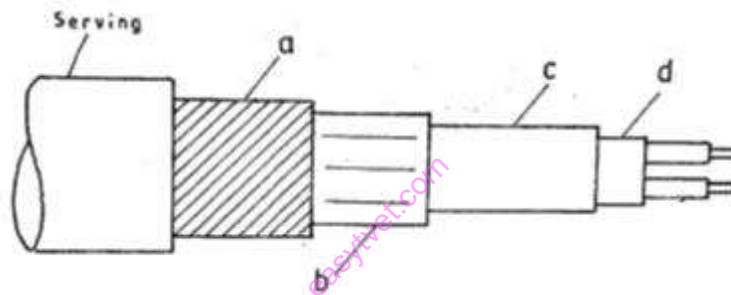


Figure 1

Describe the construction parts labelled a, b, c and d of the cable. (8 marks)

c) Cable management systems refer to the containment of cables in an electrical installation. Describe FOUR factors considered when selecting a particular cable management system. (8 marks)

13.

a) Electrical installation begins with proper site preparation. Discuss FIVE key steps in preparing a site for electrical installation. (10 marks)

b) Identify the importance of logistics planning in an installation project. (5 marks)

c) Electrical system sizing ensures safe and efficient performance. Evaluate the critical aspects of competency when conducting system sizing. (5 marks)

14.

- a) Majority of ceiling roses already installed contain either two or three connection plates, each plate including a pillar terminal for the circuit wires and a screw terminal with washer for flexible wire connection. State TWO IEE regulations regarding ceiling roses (4 marks)
- b) Draw a wiring diagram of a lighting circuit consisting of one lamp being controlled from three independent positions. (8 marks)
- c) Electrical accidents can be caused by a variety of factors, which can result in damage or death. Explain FOUR factors that lead to such accidents. (8 marks)

15.

- a) Successful installations require teamwork and compliance with standards. Describe the importance of team formation in an installation project. (10 marks)
- b) Before the commencement of any electrical installation, it is recommended to inspect it before any test is conducted. Explain the role of testing and inspection in ensuring compliance with IEE regulations. (10 marks)

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