

071306T4EEN

ELECTRICAL ENGINEERING (POWER OPTION) LEVEL 6

ENG/OS/PO/CR/01/6

Perform Electrical Installation

Nov/Dec 2024



**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. The paper consists of **TWO** sections: **A** and **B**.
3. Candidates are provided with a separate answer booklet
4. **DO NOT** write on this 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)

Answer ALL the questions in this section.

1. Employees need to be compensated in case of an accident or contracting a disease at work. The act of parliament in Kenya with a provision of compensating employees in case of injuries and diseases contacted at work is? (1 mark)
2. Jamlick is the safety engineer at Sunshine Limited and he is supposed to purchase fire extinguishers for the company. Which are the FIVE classes of fire that he should consider while deciding on the type of fire extinguishers to purchase? (5 marks)
3. Safety is paramount when working on electrical installations. What is the purpose of Occupational Safety and Health Act at the workplace (2 marks)
4. The following are different types of electrical installation: domestic installation, commercial installation and the industrial installation. What is the difference between the three types of installations? (6 marks)
5. Site survey is necessary before any electrical installation work. What are FIVE factors that should be considered when surveying a site for an electrical installation. (5 marks)
6. Earthing is vital for any electrical installation. Which are the THREE main functions of earthing? (3 marks)
7. What is the meaning of the following terms in relation to earthing? (6 marks)
8. Circuit protection is key in electrical installation. What are the THREE conditions that require circuit protection? (3 marks)
9. Why is proper sizing of an electrical cable essential? (4 marks)
10. What are the TWO advantages of steel conduit over the plastic (PVC) conduit (2 marks)
11. The following are the electrical tools; stock and die, hacksaw, screwdriver used in electrical installation work. What are the functions of each tool? (3 marks)

SECTION B (60 MARKS)

Answer Any THREE Questions in This Section

12.

- a) You have been contracted to carry out wiring of a newly constructed county hall building. Explain FIVE factors to consider while selecting the type of the wiring system for the building. (10 marks)
- b) You are required to carry a single-phase installation on a newly constructed domestic house. With an aid of a well-labelled diagram explain the sequence of supply control equipment in installation. (10 marks)

13.

- a) Upon completion of electrical installation on a newly completed building tests are carried by the technician. Explain FIVE tests that are carried out in a such newly completed building. (10 marks)
- b) Contracts are awarded after the tendering process. Explain FIVE types of contracts that may be awarded after the tendering process. (10 marks)

14.

- a) IEEE sets the regulations for all electrical installations. Explain SEVEN regulation requirements of IEEE on consumers supply intake point. (14 marks)
- b) Describe the THREE popular methods used for excess current protection in electrical Installation. (6 marks)

15.

- a) Electrical cables have definite current carrying capacities. Determine the current carrying capacity of a 0.01m^2 conductor if the current density of the conductor is $400\text{A}/\text{cm}^2$. (4 marks)
- b) With an aid of a labelled diagram, explain the functions of cross-sectional parts of an armored cable. (6 marks)
- c) With the aid of an illustration, explain stages involved during the process of estimating and tendering. (10 marks)