

071306T4EIN

Electrical Installation Level 6

ENG/OS/EIT/CR/07/6/A

Perform Electrical System Breakdown Maintenance

July/August 2023



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

**WRITTEN ASSESSMENT
3 HOURS**

INSTRUCTIONS TO CANDIDATE

*This paper consists of **TWO** sections: **A** and **B**.*

*Answer **ALL** questions in sections **A** and any **THREE** in section **B** in the answer booklet provided.*

Marks for each question are indicated in brackets.

*All questions should be answered in **English**.*

This paper consists of three (3) printed pages.

Candidate should check 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. Define troubleshooting as used in maintenance of equipment. (1 Mark)
2. List **three** activities done during routine maintenance of equipment. (3 Marks)
3. Distinguish between open circuit and short circuit. (2 Marks)
4. State **four** safety rules in handling and disposing waste materials during maintenance. (4 Marks)
5. Differentiate between a tool and an equipment. (2 Marks)
6. Assembling repaired equipment and appliance requires different methods of connection. Outline **three** methods of connection. (3 Marks)
7. Identify **three** tests that need to be carried out on a repaired electrical appliance and equipment. (3 Marks)
8. The assembly and maintenance of tools, requires different equipment and materials. Highlight **one** example of a tool used as: (4 Marks)
 - i) Cutting tool –
 - ii) Tightening tool –
 - iii) Measuring instrument –
 - iv) Indicating instrument–
9. State **four** characteristics of a good solder joint. (4 Marks)
10. Identify **four** measures that can be put in place to prevent Electrical shock. (4 Marks)
11. Personal protective equipment is vital during electrical maintenance. Outline any **three** PPEs that are necessary in the repair of an electrical equipment. (3 Marks)
12. List **four** causes of system failures in electrical equipment. (4 Marks)
13. Outline **three** mechanical inspections done on machines during maintenance. (3 Marks)

SECTION B: (60 MARKS)

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

14. Explain:

a) **Three** common types of faults in electrical and electronic installations. (6 Marks)

b) The steps followed when troubleshooting electrical circuit faults. (14 Marks)

15. (a) State **five** advantages of planned maintenance on an installation system. (5 Marks)

b) Isolation is an important factor during electrical maintenance and a safety requirement. Describe the isolation process. (7 Marks)

c) Describe **four** types of tests carried out on an electrical installations before commissioning. (8 Marks)

16. (a) List **five** safety precautions to be observed during repair and maintenance of an electrical installation. (5 Marks)

b) State **five** basic hand tools that an electrician needs during troubleshooting. (5 Marks)

c) Electrical systems should be repaired according to the user manual. Describe **five** components of an effective user manual. (10 Marks)

17. (a) State **four** ways of storing and maintaining workshop tools and equipment. (6 Marks)

b) Differentiate between **two** types of breakdown maintenance. (4 Marks)

c) Discuss **six** maintenance practices that lead to increase in the life span of tools and equipment. (12 Marks)

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