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071305T4EOP**ELECTRICAL OPERATION (POWER OPTION) LEVEL 5****ENG/OS/PO/CR/07/5**

Printed By: Technical And Vocational College

Perform Electrical Breakdown Maintenance

Date: 28.07.2025 07:43 AM

July/August 2025

Printed By: Technical And Vocational College Date: 28.07.2025

07:43 AM



Technical And Vocational College Date: 28.07.2025 07:43 AM

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

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WRITTEN ASSESSMENT**Time: 3 HOURS**

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INSTRUCTIONS TO CANDIDATE

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

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2. Attempt **ALL** questions in section A and **ANY THREE (3)** questions in section B.

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3. Marks for each question are indicated in the brackets.

4. Candidates are provided with a separate answer booklet

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5. **DO NOT** write on the question paper.

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This paper consists of FIVE (5) 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 the questions in this section.

1. Like a doctor, an electrician uses various methods to diagnose a fault in an electrical system. Explain TWO methods used to detect failure in an electrical system. (4 marks)
2. There is a procedure. Identify FOUR essential tools used in electrical troubleshooting. (4 marks)
3. After repairing any electrical installation work, it is vital for testing to be done. Describe the purpose of testing a repaired installation. (4 marks)
4. After identifying a blown fuse as the cause of failure in a circuit, state FOUR procedures to safely replace the fuse. (4 marks)
5. List the steps you would take to test the system and confirm that it is working properly. (4 marks)
6. While working in a workshop, one should always ensure safety during fault diagnosis. State FOUR safety precautions that should be taken when diagnosing or repairing an electrical system. (4 marks)
7. Electrical systems are prone to failure. Identify FOUR common causes of electrical system failure. (4 marks)
8. A continuity tester and an insulation resistance tester are essential tools found in any electrical workshop. Explain the use of a continuity tester and an insulation resistance tester in electrical system testing. (4 marks)
9. It is important to document the steps taken in troubleshooting and repairing an system. Explain TWO reasons why documentation is important. (4 marks)
10. System maintenance can be done regularly or after a given period of time. Explain TWO importance of regular system maintenance in preventing electrical system failures. (4 marks)

SECTION B (60 MARKS)**Attempt any THREE questions from this section.**

11.

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- a) Faults are the missteps that renders a machine ineffective for use. Explain FOUR common types of faults in electrical and electronic installations. (8 Marks)

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- b) During troubleshooting of electric circuit faults, several steps are to be observed to ensure successful process. Discuss FOUR steps followed when troubleshooting electrical circuit faults. (12 Marks)

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12.

- a) There are several types of maintenance performed on an electrical installation. Explain FOUR advantages of planned maintenance on an installation system. (4 Marks)

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- b) When a breakdown occurs in an electrical system, isolation is the first step to be taken into consideration in order to ensure a correct repair process. Explain FOUR isolation processes for electrical maintenance. (8 Marks)

- c) Commissioning is a process done on a new after testing. Discuss

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- FOUR types of tests carried out on an electrical installation before commissioning. (8 Marks)

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- a) Safety is vital in electrical work. Explain FIVE be observed

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- during the repair and maintenance of an electrical installation. (5 Marks)

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- b) Tools are a major part of the troubleshooting process. State FIVE basic hand tools an electrician needs during troubleshooting. (5 Marks)

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- c) During electrical system repairs, a technician should take into consideration a user manual to ensure a successful process. Explain FIVE components of an effective user manual for electrical system repairs. (10 Marks)

14.

- a) After use, tools should be stored and maintained. Explain SIX ways of storing and maintaining workshop tools and equipment.

(6 Marks) b)

e is divided into two categories according to the circumstances in which the fault occurs. Differentiate between the TWO types of breakdown maintenance.

(4 Marks)

- c) Correct maintenance practices on tools and equipment increase their lifespan. Discuss FIVE maintenance practices that increase the lifespan of tools and equipment.

(10 Marks)