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Date: 25.07.2025 11:20 AM

071304T4EIN**ELECTRICAL INSTALLATION LEVEL 4****ENG/OS/EI/CR/02/4/A**

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Perform Electrical Installation Testing

Date: 25.07.2025 11:20 AM

July/August 2025

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

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WRITTEN ASSESSMENT

TIME: 2 HOURS

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INSTRUCTIONS TO CANDIDATE

1. This consists of TWO sections A and B**2. Answer ALL the questions in each section.**

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

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4. You are provided with a separate answer booklet to answer the questions.**5. Do not write on the question paper.**

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This paper consists of FIVE (5) printed pages

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**Candidates should check the question paper to ascertain that all pages
are printed as indicated and that no questions are missing**

SECTION A (10 MARKS)

Attempted all questions. Each question carries one mark

1. Checking that connection is secure and correct is part of verifying that installation is ready for use.

Which of the following is the most appropriate method used to conduct such verification?

- A. Carrying out polarity test
- B. Conducting continuity test
- C. Carrying out visual inspection
- D. Using layout diagrams for verification

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2. Selecting appropriate tools and instruments for testing electrical circuits is the first step to achieving correct test results. Identify the most appropriate instrument to be used for testing insulation resistance of a circuit.

- A. Oscilloscope
- B. Megohmmeter (megger)
- C. Multimeter
- D. Phase tester

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3. If an electrical circuit needs to be tested for current, how would you connect a digital multimeter to that circuit?

- A. Connect in series
- B. Connect in parallel
- C. Connect in parallel-series
- D. Connect in series-parallel

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4. PPEs must be worn during testing electrical systems. Select PPEs required for testing circuits at heights.

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- A. Hand gloves, goggles
- B. Safety belt, safety helmet
- C. Safety boots, ear muffs
- D. Apron, dust mask

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5. Short circuit fault in an electrical cable occurs when there is a _____
- A. Low value of insulation resistance between two cores
 - B. High value of insulation resistance between two cores
 - C. Low value of voltage between any core and earth
 - D. High value of insulation resistance between any core and earth
6. Inspection and test results are usually recorded for future references. For how long should these records be kept?
- A. For 1 year
 - B. For 3 years
 - C. For 10 years
 - D. During the entire working life of the installation
7. To ensure the well-being of personnel, and maintaining the integrity of the testing process it is crucial to adhere to safety precautions, what is the primary purpose of adhering to safety precautions during testing?
- A. To ensure accurate results
 - B. To minimize risks to personnel and equipment
 - C. To speed up the testing process
 - D. To prevent data collection errors
8. Different tests are conducted before commissioning a new electrical system. Give the main reason for carrying out polarity test.
- A. To ensure that Edison screw lamp holders are connected correctly
 - B. To ensure continuity throughout the installation
 - C. To ascertain that circuits are correctly fused
 - D. To ensure that protective devices and switches are connected to the live conductor
9. It is important to carry out periodic testing on electrical installation. Who is supposed to carry out periodic testing of electrical installations?
- A. Kenya power
 - B. Energy regulation commission
 - C. Qualified electrician
 - D. Building inspector

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10. Give the purpose of conducting earth fault loop impedance test.

- A. Test for voltage drops across lighting and power circuits
- B. Ensure the earth path fault current
- C. Measure insulation resistance
- D. Test RCD tripping time

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SECTION B (40 MARKS)***Attempted all questions.***

11. Inspecting and testing ~~es~~ must be conducted on newly installed systems. Differentiate between electrical testing and inspection. (2 Marks)
12. Various tools and instruments are used for testing different quantities in electrical installations. Give THREE reasons why it is important to use proper testing tools in electrical work? (3 Marks)
13. Installation test certificate is usually issued by electrician conducting tests on an electrical system. Outline FOUR items included in an installation test result certificate. (4 Marks)
14. Newly installed electrical systems must be tested before commissioning. FOUR important reasons for testing electrical systems. (4 Marks)
15. Safety procedures must be observed during testing of an electrical installation. Give FOUR safety factors to be considered before testing an electrical system. (4 Marks)
16. After carrying out a visual inspection you notice that some equipment and appliance requires re-connection. Outline any FOUR methods of connection that you are likely to use. (4 Marks)
17. ~~ust be tested to verify proper functionality. List four parts of earthing systems in an electrical installation.~~ (4 Marks)
18. In a domestic electrical wiring, all final sub circuits must be tested to ascertain safety of the equipment and users. Identify four types of final sub circuits to be tested in an electrical installation. (4 Marks)
19. Insulation resistance test is carried out to ensure no leakages of current in the electrical system, proper termination and insulators are in perfect condition. Briefly explain the procedure for testing insulation resistance of electrical circuit using megohmmeter (4 Marks)
20. Carrying out polarity test is one of the important procedural in installation. Describe step by step how polarity test is performed. (4Marks)
21. Errors can cause misleading interpretation of test results of an electrical installation. List THREE types of errors experienced when using a mega-ohmmeter when testing insulation resistance of a circuit. (3 Marks)