

071305T4EIN

ELECTRICAL INSTALLATION LEVEL 4

ENG/OS/EI/CR/02/4A

Perform Testing of Electrical Installation

July/August 2024

Time: 2 Hours



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

WRITTEN ASSESSMENT

2 HOURS

INSTRUCTIONS TO CANDIDATE

1. This paper consists of **TWO** sections: **A** and **B**.
2. Answer **ALL** questions in sections A and B in the answer booklet provided.
3. Marks for each question are indicated in brackets.
4. Do not write on this question paper.
5. Answer the questions in **English**.

This paper consists of FIVE (5) printed pages.

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

SECTION A (10 Marks)

Answer ALL questions in this section. Each correct answer is 1 mark

1. A loose connection of a wire at a fitting point results in _____
 - A. Very high electrical resistance at the connection.
 - B. Low potential difference between the wire and the termination point.
 - C. Very high capacitance at the connection.
 - D. Low resistance to the flow of charges.
2. _____ involves identifying the test to be carried out and the necessary test equipment.
 - A. Test planning
 - B. Test execution
 - C. Test design
 - D. Test analysis
3. _____ is the entity that typically establishes the standards for testing procedures.
 - A. Individual companies
 - B. Regulatory authorities
 - C. Testing tool vendors
 - D. Academic institutions
4. _____ involves issuing certificates to confirm the completion of testing or compliance with standards.
 - A. Test planning
 - B. Test execution
 - C. Test reporting
 - D. Test analysis
5. In a regulated industry, role played by IEEE standards in testing is _____
 - A. They provide guidelines for efficient test execution.
 - B. They ensure that testing aligns with legal requirements and industry best practices.
 - C. They dictate specific testing methodologies.
 - D. They focus solely on documentation requirements.

6. The primary focus in applying procedures of testing according to standards is____
- A. Test execution efficiency
 - B. Adherence to industry regulations
 - C. Test case complexity
 - D. Test environment setup
7. It is important to identify the types of tests to be carried out early in the testing process in order _____
- A. To minimize project risks
 - B. To streamline the testing effort
 - C. To maximize test coverage
 - D. To expedite defect resolution
8. _____ is a step in the testing process that involves categorizing tests based on their objectives and requirements.
- A. Test planning
 - B. Test execution
 - C. Test design
 - D. Test analysis
9. _____ is responsible for ensuring that IEEE regulations are observed during testing
- A. Project managers
 - B. Testers
 - C. Quality assurance team player
 - D. Regulatory authorities
10. The following factors are not considered when identifying test equipment except_____
- A. Project schedule
 - B. Budget constraints
 - C. Test objectives and requirements
 - D. Team preferences

SECTION B (40 MARKS)

Answer ALL questions in this section

11. Interpreting test results effectively depends on the specific type of test you're dealing with. Highlight **three** actions that should be taken when interpreting test results that consistently show failures (3marks)
12. By prioritizing safety and working together, organizations can create a safer and more productive work environment for everyone. Explain **four** ways on promoting a culture of safety within a testing team. (4 marks)
13. Testing procedures are a structured set of instructions that define exactly how a test should be conducted. Outline **four** ways of ensuring that testing procedures are effectively implemented and maintained in accordance with standards. (4marks)
14. Before undertaking an installation project, tests need to be done to determine the suitability of the installation. State five common types of tests that may be identified during the planning phase. (5marks)
15. There are certain factors that should be considered before procuring test equipment that meet specific needs and deliver accurate results for a project. Outline **four** considerations that should be taken into account when procuring or acquiring test equipment. (4marks)
16. IEEE publishes numerous standards that provide recommended practices and guidelines for various aspects of electrical and electronic testing. Give **four** consequences of non-compliance with IEEE standards during testing. (4 mark)
17. Inaccurate or misleading certificates during testing can be a serious issue that undermines the integrity and reliability of the testing process. State **four** consequences of issuing inaccurate or misleading certificates during testing. (4marks)
18. A testing certificate is a formal document issued by a qualified electrician that confirms a system has undergone specific tests and met the specified requirements of a relevant standard Highlight any **four** information that should be included in a testing certificate. (5marks)
19. After carrying out a visual inspection you notice that some equipment and appliance requires re-connection. Outline three methods of connection that you are likely to use. (3marks)

20. Issuing certificates during testing is a crucial step that signifies the completion of a testing process and verifies that a product, system, or material meets the specified requirements. Explain **two** purpose of issuing certificates during testing.

(4marks)

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