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071305T4EOP

ELECTRICAL OPERATION LEVEL 5

ENG/OS/PO/CR/02/5/A

Install Electrical Power Lines

March/April 2025

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

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PRACTICAL ASSESSMENT

TIME: 6 HOURS

INSTRUCTIONS TO CANDIDATE

1. **DO NOT** write on this question paper.
2. Must adhere to Environmental Health and Safety (EHS) and IEE regulations.
3. Be in correct personal protective equipment.
4. A separate paper will be given.

This paper consists of THREE (3) printed pages.

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

Carry out the following tasks:

1. Design and construct a dead three phase three wire transmission line.
   (a) Dig two holes 10m apart for the poles and two holes for stay wires.
   (b) Erect two wooden poles and fix stay wires to the poles.
   (c) Mount insulators and construct the transmission line.
   (d) Terminate the transmission line.
2. Construct three phase four wire distribution line on the span in in task 1.
   (a) Fix shackle insulator on the poles.
   (b) Mount distribution line on the shackle insulators.
   (c) Perform protective multiple earthing (PME) for the neutral conductor.
   (d) Fix protective multiple earthing (PME) plate on the adjacent pole.
   (e) Install lightening arrestor on the receiving end pole.

You have been provided with the following resources for the practical tasks:

- Two wooden poles (6m – 9m)
- Cross arms
- Bolts and nuts (5/8)
- Washers
- $20mm^2$ conductor
- Hoe
- Scoop
- Hand drilling machine
- Wooden bit (20”)
- Pin insulators (11 kV)
- Stay wire
- Stay block
- Shackle type insulator
- 50mm by 75mm nuts
- Wooden pole climbers
- Full body harness
- Wire strainer

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- Ropes
- Danger Plates
- Protective multiple earthing (PME) plate
- Earth loop impedance tester
- Nails (1/2’)
- Lightening arrestor
- Technician tool box

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