ELECTRICAL INSTALLATION

ENG/OS/EI/CR/02/03/MA

Install Trunking System

July/August 2025

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

PRACTICAL ASSESSMENT

INSTRUCTIONS TO THE ASSESSOR:

1. This assessment is to take place in the prescribed order as arranged in the tool.
2. Capture clear **photographs** and/or **videos** of each candidate's work as they perform the tasks and Label all media files with: Candidate Registration Number, Unit Code, Practical Session Number, and Date.
3. Record candidate scores and assessor remarks in the observation checklists for each session.
4. Store all completed checklists, media files, and candidate drawings in a secure digital/physical folder per candidate.
5. All measurements are in millimeters (mm)

1. CANDIDATE & ASSESSOR DETAILS

Candidate Name:	**CDACC Reg. No.:**
Assessor Name:	**Assessor ID Number:**

2. PROJECT BRIEF

In this project, you will be required to demonstrate competence in all five elements by completing three hands-on sessions (each ~1-4 hours) and an oral assessment (~1 hour). Follow the working drawings and specifications provided.

3. SECTION 1 (SESSION 1-4 HOURS): TRUNKING ACCESSORIES

Elements Covered

Identify Trunking accessories

3.1 Tasks

1. Identify trunk types and sizes from a variety of pieces provided by the assessor
2. Identify various conduit accessories from a variety provided by the assessor

3.2 Practical Checklist

No.	Performance Criterion	Max Marks	Awarded	Comment
1	Wore PPEs as per OSHA and EHS standards *a) goggles,* *b) Helmet,* *c) Safety boot,* *d) gloves*	3		

	e) Apron/overall ***(Award 3×1 Mark)***			
2	**Identified** **i. Types of trunks** • *PVC* • *metal/steel* • galvanized iron ***(Award 3×1 Mark)*** **ii. Sizes of trunks** • 16mm x 16mm • 25mm x 16mm • 25mm x 25mm • 40mm x 25mm ***(Award any 3×1)*** **iii. Accessories** per IEC standard ***(Award any 6×1)***	3 4 6		
3	**Performed housekeeping** i. Cleaned Workplace ii. Tools returned after use *(Award 2 marks each)*	4		
	Total Section 1	**20**		

4. SECTION 2 (SESSION 1-4 HOURS): TRUNKING WORK PIECES

Elements Covered

1. Prepare Trunking work pieces
2. Mount Prepare Trunking work pieces

4.1 Tasks

1. Prepare metallic trunking work pieces for the installation of Figure 1
2. Mount metallic trunking work pieces for the installation of Figure 1
3. Figure 1 shows an electrical layout diagram of a final sub-circuit.

   i. Draw the wiring diagram

   ii. Install the circuit such that lamp L1 is controlled by switch S1

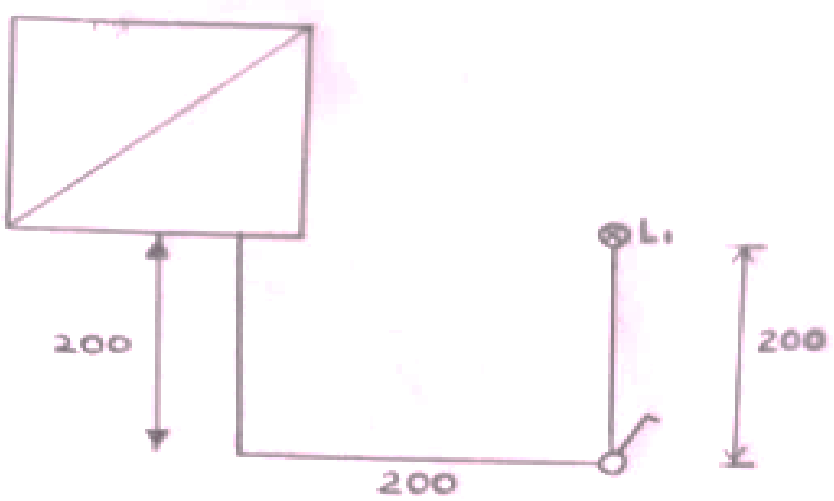

Figure 1

4.2 Practical Checklist

No.	Performance Criterion-	Max Marks	Awarded	Comment
1	Applied safety measures as per OSHA and EHS i. Used PPEs ii. Avoided overcrowding of cables *iii.* Secured and safe mounting of trunking ***(Award 1 mark each)***	**3**		

2	Selected required Tools, Materials, and Equipment for use as Per Work i. Cutting tools; *(Hacksaw)* ii. Cable stripping *(side cutter, combinational pliers)* iii. Fastening *(Screw Driver)* iv. Measuring tools *(Tape measure,* **v.** Marking tools *(Spirit level)* (**Award 5×1)**	5		
3	Measured Trunking as per layout diagram given(±2mm) *i.* Vertical *(Award 2 x 1)* ii. Horizontal *(Award 1 x 1)*	3		
4	Trunking cut accurately as per the measurements taken 90^0 (Award any 2 x 1)	2		
5	Joints fitted smoothly *i. Trunking covers (Award 3×1)* *ii. Trunking body (Award 3×1)*	3 3		
6	Performed housekeeping procedures *i. Cleaned working area after work* ii. *cleaned tools and stored/arranged them*	2		
	Total Section 2	**21**		

NB: Photos and videos should be taken as the candidate performs items 3, 4 and 5

5. SECTION 3 (SESSION (1 -4 HOURS): INSTALLATION AND TESTS

Elements Covered

- Mount Trunking work pieces
- Install of electrical cables and accessories
- Perform Tests and Inspection

5.1 Tasks

1. Figure 2 shows a layout diagram of final sub-circuits. Draw a wiring diagram such that:
    i. Lamp L1 and L2 are controlled from two different points
    ii. socket outlets are connected in radial

2. Using PVC mini-trunking, install the circuit in Figure 2
3. Perform the following tests
    i. Continuity
    ii. Polarity

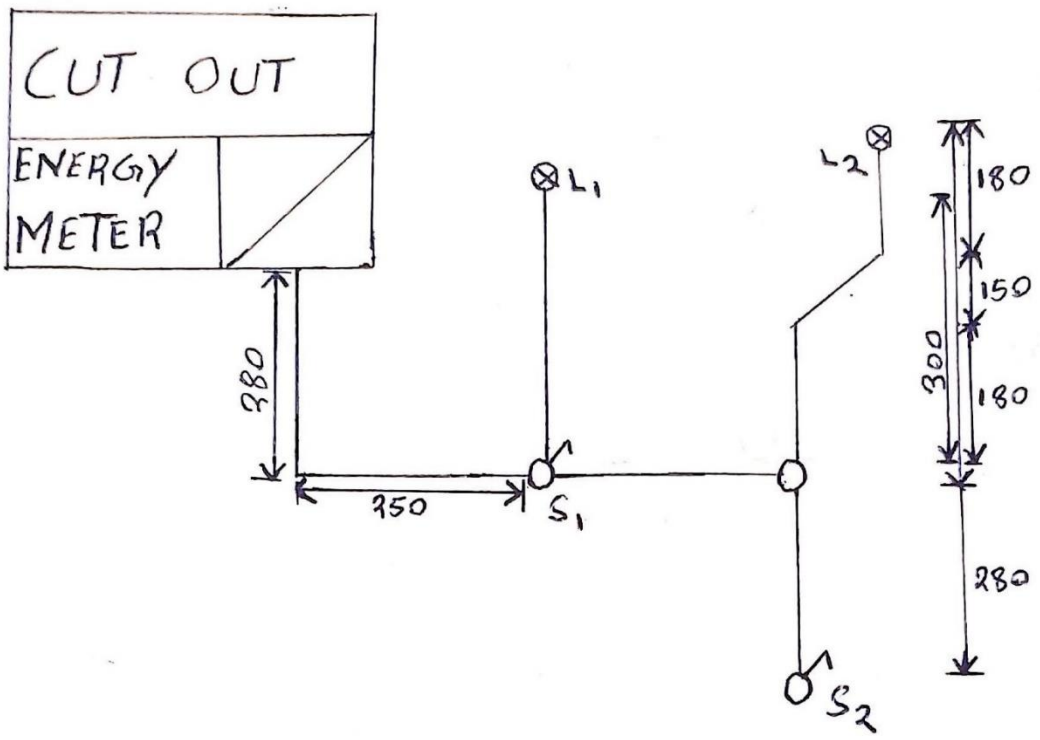

Figure 2

5.2 Practical Checklist

No.	Performance Criterion	Marks	Awarded	Comment
1	Wore the following PPEs • *Helmet* • *Safety goggle* • *Safety boot* • *Dust coat/overall* • *Safety gloves* ***(Award 2x1 marks)***	2		
2	Identified cables by colour • *Live* • *Neutral* • *Earth* Identified cable by size • *1.5mm2* • *2.5mm2* • *4.0mm2* ***(Award 1 mark each)***	6		
3	Laid Cables in the trunk as per IEC Standards • *Correct trunking type and size* • *Cables laid neatly inside* • *No cable damage or sharp bends* • *Trunking fixed securely* • *Covers fitted properly* ***Award 5x2 marks each*** Secured trunk mounting • *Firm*	10 4		

	• *Level* **(Award 2× 2)**			
4	Installed property at single phase intake point • *Cut-out* • *Energy meter* • *CCU* ***(Award 3x1 marks each)***	6		
5	Secured mounting • *Firm* • *Level* ***Award 2 marks each***	4		
6	**Stripped Cables** • *Safety precautions* • *Select the right tool* • *Measure and mark* • *Strip the inner conductor* • *Inspect the conductor* ***(Award 5x1)***	5		
7	Fixed Accessories as per IEC Standards *(Assessor ensures candidate has achieved)* • *Correct type of accessory used* • *Mounted securely and level* • *Proper wiring connections* • *Meets IEC safety requirements* • *Neat and professional finish* ***(Award 5x1marks)***	5		

8	Correct Use of Hand Tools • *Right tool for the job* • *Safe and proper handling* • *Tool in good condition* • *Follows safety rules* • *Cleans and stores tool after use* (***Award 5 ×1 mark each)***	5		
9	Performed Continuity test • *Isolated supply* • *Set test equipment to Continuity* • *checked for open circuit and correct Test conductors* ***(Award2×3)***	6		
8	Performed Polarity test • *Candidate observed safety by isolating supply,* • *Selected right test equipment, Multimeter or continuity tester* • *Linked line and neutral at DB;* • *Tested switch terminals* • *performed continuity test between line pin and neutral bar of the socket outlet* • *Confirmed correct polarity* (***Award 1 mark for any 6 points)***	6		
9	Correct circuit operation • Lighting (***Award* 5 *or* 0)** • Sockets (***Award* 5 *or* 0)**	5		

		5		
	Total Section 3	**69**		

NB: Photos and videos should be taken as the candidate performs items 3, 5 and 6

6. SECTION 4 (SESSION 4 – 1 HOUR): ORAL ASSESSMENT (25 MARKS)

Assessor to award marks for each correct response by the candidate in the table below:

Q#	Question	Expected Key response	Max Marks	Awarded
1	State any two importance of OSHA in electrical work?	Prevents accidents, legal compliance, Reduces risk of fire*(Award 2×2)= 4Marks*	2	
2	Apart from PVC Trunking, name any other type of Trunking	Metallic Trunking, Galvanized Iron *(Award 2×1)=Max 5Marks*	2	
3	Name Two tools that can be used for stripping cables	Combinational pliers Side cutter Cable stripper*(Award 2×2)=Max 4*	3	
4	What are the two reasons for Earthing an electrical Installation	**Safety**- reduce risk of shock, Device protection Stabilize voltage, Prevent damage from lightning	4	
5	State any two ways of ensuring cables are not overloaded?	Proper load calculation, select rght cable sizes as per	2	

		IEE/BS7671 standards, fuses and breakers		
6	As an electrical technician, Wafula wants advice from you on how he can manage his personal finances while carrying out work?	✓ Planning expenditure (Budgeting) ✓ Saving, ✓ Avoiding debt	4	
7	Name two PPE items for electrical work and their use.	**Helmet** – head safety **Safety boots** – protect feet against injury **Gloves** – insulation, **Safety goggles** – eye safety **Hearing protection**- when operating power tools *Any two correct response* *(Award 2×5)=Max 5Marks*	2	
8	What type of meter will you require to measure continuity?	Multimeter (Digital or Analogue) *(Award 2×1)=Max 2 Marks*	2	
9	You are given 2 ,two way switches, what other type of switch do you need to light a group of lamps from Three positions	Intermediate switch	1	
10	Apart from the trunking you are using in this task, What are other,	25mm× 16mm	3	

	Three other Trunking sizes available	25mm ×25mm 40mm× 25mm *(Award 2×3)=Max 6 Marks*		
	Total Oral		**25**	

7. SUMMARY OF ASSESSMENT

PRACTICAL ASSESSMENT			
S/N	**SECTION**	**Total Marks**	**Marks Awarded**
1.	Assessment 1	20	
2.	Assessment 2	21	
3.	Assessment 3	69	
	Total	**110**	
	Percentage (100%)		
ORAL ASSESSMENT			
1.	Oral Assessment	**25**	
	Percentage (100%)		

The candidate was found to be:

Competent ☐ Not yet Competent ☐

(Please tick as appropriate)

The candidate is competent if the candidate obtains at least 50%