MODULE I

ELECTRICAL INSTALLATION TECHNOLOGY

ENG/OS/EI/CR/01/3/MB

INSTALL PVC SHEATHED CABLE SYSTEM

SEPTEMBER-NOVEMBER 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 at critical points 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. Provide the labelled cable samples to the candidate for practical assessment 1

CANDIDATE & ASSESSOR DETAILS

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

PRACTICAL BRIEF

In this practical, you will be required to demonstrate competence in installing PVC sheathed cable system. The assessment will involve hands-on sessions and an oral assessment.

SESSION 1 (2 HOURS) MAKE CABLE JOINTS

Assessment Date:	
Assessment Venue:	

PRACTICAL CHECKLIST

No.	Items of Evaluation	Max Marks	Awarded
1.	Wore personal protective equipment; • Overall • Gloves • Safety boots *(Award 1 mark for each or zero)*	 1 1 1	
2.	Identified cables based on color codes; i. Red ii. Black iii. Green/Yellow *(Award 1 mark for each or zero)*	 1 1 1	

3.	Identified cables based on cable sizes; i. $1.0mm^2$ ii. $1.5\ mm^2$ iii. $2.5\ mm^2$ iv. $4.0\ mm^2$ v. $6.0\ mm^2$ *(Award 1 mark for each or zero)*	 1 1 1 1 1	
4.	Used the following tools correctly; i. cutters ii. stripper iii. pliers iv. soldering iron *(Award 1 mark for each or zero)*	 1 1 1 1	
5.	Stripped the insulation cleanly with strands left intact *(Award 3 mark for each cable or zero)*	6	
6.	Formed the joint correctly with a firm mechanical connection *(Award 5 mark or zero)*	5	
7.	Soldered the joint properly with no cold joints *(Award 5 mark for each or zero)*	5	
8.	Insulated the joint fully with no copper exposed *(Award 3 mark or zero)*	3	
9.	Used correct measurements for the T-joint ±2mm i. 80mm *(Award 3 mark or zero)* ii. 50mm *(Award 3 mark or zero)*	 3 3	
	TOTAL	**40**	
REMARKS:			

NB: Photos and videos should be taken as the candidate performs item 9.

SESSION 2 (4 HOURS): INSTALL PVC SHEATHED CABLES AND ACCESSORIES

Assessment Date:	
Assessment Venue:	

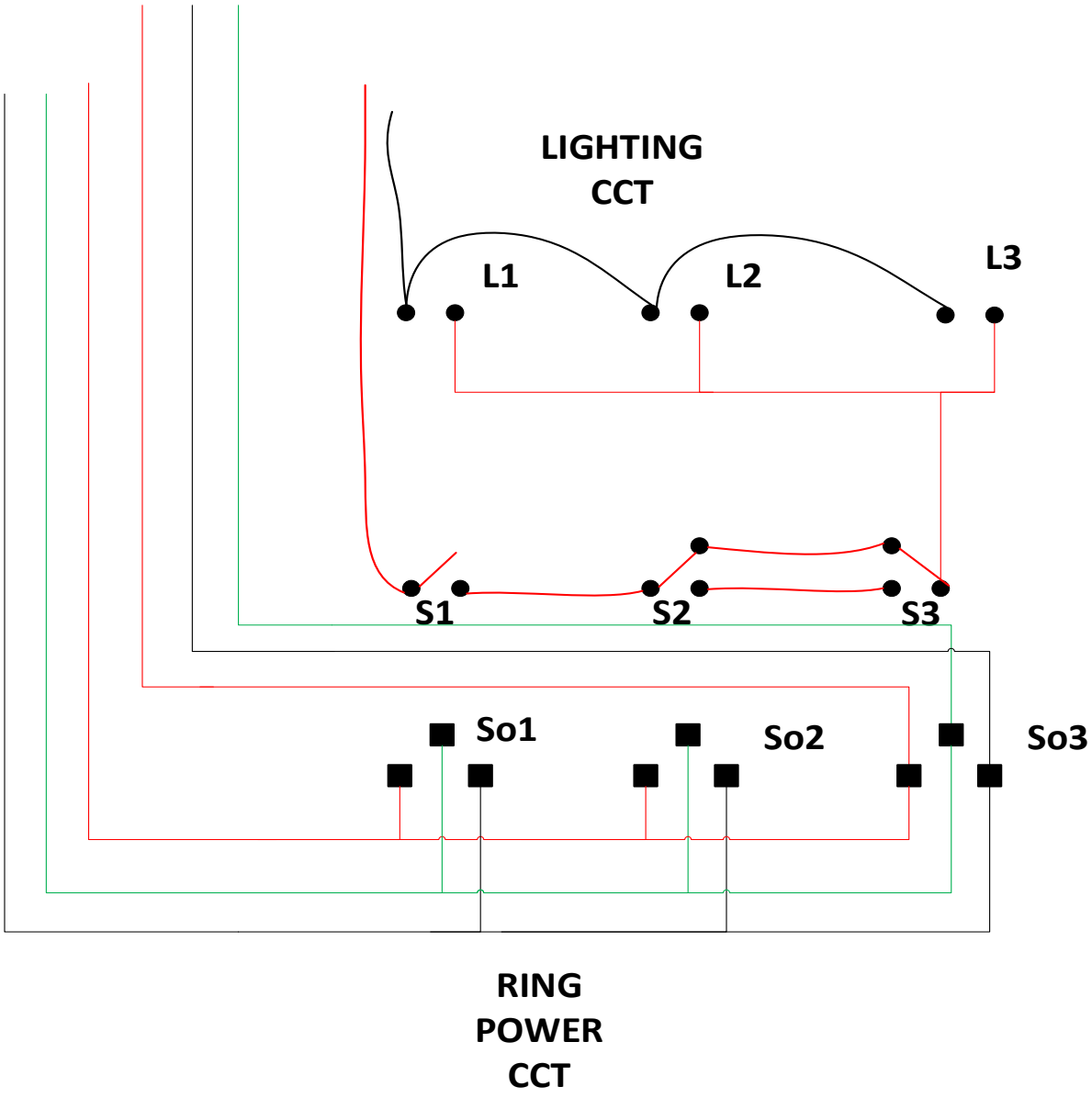
PRACTICAL CHECKLIST

No.	Items of Evaluation	Max Marks	Awarded
1.	Wore PPE • Overall • Safety boots • Dust mask *(Award 1 marks each or zero)*	 1 1 1	
2.	Applied good housekeeping practice • Ensured clean working area before beginning working. *(Award 1 or 0)* • Tidy working area arrangement *(Award 1 or 0)* • Proper Waste disposal *(Award 1 or 0)*	 1 1 1	
3.	Observed color code (Award 1 or 0)	1	
4.	Drew wiring diagram as per layout diagram • At the C.C.U *(Award 2 or 0)* • Main earth terminal *(Award 2 or 0)* • Lighting *(Award 2 or 0)* • Power sockets *(Award 2 or 0)* • Earthing *(Award 2 or 0)*	 2 2 2 2 2	
5.	Installed and wired the final circuits correctly. • Good utilization of the installation board Layout *(Award 2 or 0)* • Measurements ± 2mm *(Award 1 x 10)*	 2 10	
6.	Fixed components;		

	• Level *(Award any 1 x 6)* • Firmness *(Award any 1 x 6)*	6 6	
7.	Fixed Sheathed cable flat on the surface • Horizontal *(Award 2 or 0)* • Vertical *(Award 2 or 0)*	 2 2	
8.	Spaced Cable clips uniformly *(Award 3 or 0)*	3	
9.	Terminated cables correctly (twisted, folded firmly) and correct circuit connections at: • C.C.U *(Award 2 or 0)* • Lamps *(Award 1 marks for each correct lamp connection 1x3)* • Switches *(Award 2 marks for each correct switch connection 2x3)* • Socket outlets *(Award 2 marks for each correct socket connection 2x3)*	 2 3 6 6	
10.	Performed; • Continuity test *(Award 2 or 0)* • Polarity test on the lighting circuit *(Award 2 or 0)* • Insulation test *(Award 3 or 0)*	 2 2 3	
	TOTAL	**72**	
REMARKS:			

NB: Photos and videos should be taken as the candidate performs items 9.

WIRING DIAGRAM



SECTION 3: ORAL ASSESSMENT (25 MARKS)

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

Q#	Question	Expected Key Points	Max Marks	Awarded
1	State two factors to consider when selecting the size of PVC-sheathed cables.	Current rating, voltage drop and mechanical strength *(Award 2 marks each or zero)*	4	
2	Name three type of joints used for PVC-sheathed conductors apart from Tee joint.	Married joint, Straight-through joint, Britannia, Straight twist, Scarf *(Award 1 mark each or zero)*	3	
3	Name two insulation material used after soldering a PVC cable joint.	PVC insulation tape, heat-shrink tubing *(Award 1 mark each or zero)*	2	
4	Name the instrument used to measure insulation resistance of PVC-sheathed cables.	Megger (insulation resistance tester) *(Award 1 marks or zero)*	1	
5	State one PPE specific to soldering cable joints.	Heat-resistant gloves, safety goggles *(Award 1 mark or zero)*	1	
6	State two technical limitation of a Tee joint.	Weak mechanical strength, higher resistance *(Award 1 mark each or zero)*	2	
7	Identify THREE protective device used in low-voltage PVC cable installations.	Circuit breaker, Fuse, Earth leakage protector (RCD) *(Award 1 mark each or zero)*	3	
8	Explain two reason for installing protective devices in PVC-sheathed cable circuits.	Prevents overloads, short-circuit protection *(Award 2 marks each or zero)*	4	
9	Name two methods of fixing PVC-sheathed cables onto surfaces.	Cable clips, saddles *(Award 1 mark or zero)*	2	

10	State two precaution when terminating PVC cables in sockets.	Ensure firm connection, no exposed conductors *(Award 1 mark each or zero)*	2	
11	State one technical precaution when tightening terminal screws.	Avoid over-tightening to prevent conductor damage *(Award 1 mark or zero)*	1	
	Total Oral		**25**	

SUMMARY OF ASSESSMENT

SECTION	**Total Marks**	**Marks Awarded**
Assessment 1	40	
Assessment 2	72	
TOTAL	**108**	
Percentage %		
ORAL ASSSESMENT		
Oral assessment	**25**	
Percentage %		

ASSESMENT OUTCOME

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%

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