

MODULE 1

ELECTRICAL INSTALLATION TECHNOLOGY LEVEL 3, LEVEL 4

ELECTRICAL ENGINEERING LEVEL 5, LEVEL 6

ENG/OS/EI/CR/01/3/MA

INSTALL PVC SHEATHED CABLE SYSTEM

January-March 2026



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.

Store all completed checklists, media files, and candidate drawings in a secure digital/physical folder per candidate.

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 making electrical cable joints, installing consumer intake point and installing PVC sheathed cable system. The assessment will involve hands-on sessions and an oral assessment.

SESSION 1 (2 HOURS) CABLE JOINTS

Assessment Date:	
Assessment Venue:	

PRACTICAL CHECKLIST

No.	Items of Evaluation	Max Marks	Awarded
1.	Wore personal protective equipment; • Overall • Safety boots <i>(Award 1 mark for each or zero)</i>	1 1	
2.	Identified the labeled cable sizes; i. A ii. B iii. C iv. D v. E <i>(Award 1 mark for each or zero)</i>	1 1 1 1 1	

3.	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	
	MARRIED ELECTRICAL JOINT		
4.	Stripped the insulation cleanly with strands left intact (Award 1 mark for each cable or zero, total 2marks)	2	
5.	Formed the married joint correctly with a firm mechanical connection (Award 4 marks or zero)	4	
6.	Soldered the married joint properly with no cold joints (Award 4 marks for each or zero)	4	
7.	Used correct measurements for the married joint. 50mm, $\pm 2\text{mm}$ (Award 3 mark or zero)	3	
	BRITANNIA STRAIGHT JOINT		
8.	Stripped the insulation cleanly. (Award 1 mark for each cable or zero, total 3marks)	3	
9.	Formed the Britannia straight joint correctly with a firm mechanical connection (Award 4 marks or zero)	4	
10.	Soldered the Britannia straight joint properly with no cold joints (Award 4 marks or zero)	4	
11.	Used correct measurements for the Britannia straight joint $\pm 2\text{mm}$ i. 60mm (Award 2 mark or zero) ii. 80mm (Award 2 mark or zero)	2 2	
	TOTAL	39	

REMARKS:

NB: Photos and videos should be taken as the candidate performs items 4, 6, 8 and 10.

SESSION 2 (2 HOURS) INSTALL CONSUMER INTAKE POINT

Assessment Date:	
Assessment Venue:	

PRACTICAL CHECKLIST

No.	Items of Evaluation	Max Marks	Awarded
1.	Wore personal protective equipment; • Overall • Safety boots <i>(Award 1 mark for each or zero)</i>	1 1	
2.	Applied good housekeeping practice i. Ensured clean working area before beginning working. <i>(Award 1 or 0)</i> ii. Tidy working area arrangement <i>(Award 1 or 0)</i> iii. Proper Waste disposal <i>(Award 1 or 0)</i>	1 1 1	
3.	Correctly identified the following tools i. Ballpein hammer ii. Pliers iii. Screw driver <i>(Award 1 mark for each or zero)</i>	1 1 1	
4.	Mounted the following correctly on the board. i. Cut-out ii. Energy meter iii. Switch fuse/isolator <i>(Award 2 mark for each or zero)</i>	2 2 2	

	Connected the components in the right sequence (<i>cutout to energy meter to switch fuse to CCU</i>) (Award 2 mark or zero)	2	
5.	Mounted the CCU on the board i. Firmness ii. Level (Award 2 marks for each or zero)	2 2	
6	Installed and label the correct circuit breakers for the following i. Lighting 6A ii. Sockets 20A iii. Cooker 32A (Award 2 marks for each or zero)	2 2 2	
7.	Connected the switch-fuse output to CCU main busbar (Award 2 marks for each or zero)	2	
8.	Connected neutral and earth conductors to CCU bars (Award 2 marks for each or zero, total 4marks)	4	
9.	Ensured neat cable dressing and correct color coding (Award 2 marks for each or zero)	2	
	TOTAL	34	
REMARKS:			

NB: Photos and videos should be taken as the candidate performs items 6, 7, 8 and 9.

SESSION 3 (3 HOURS): PERFORM PVC SHEATHED INSTALLATION

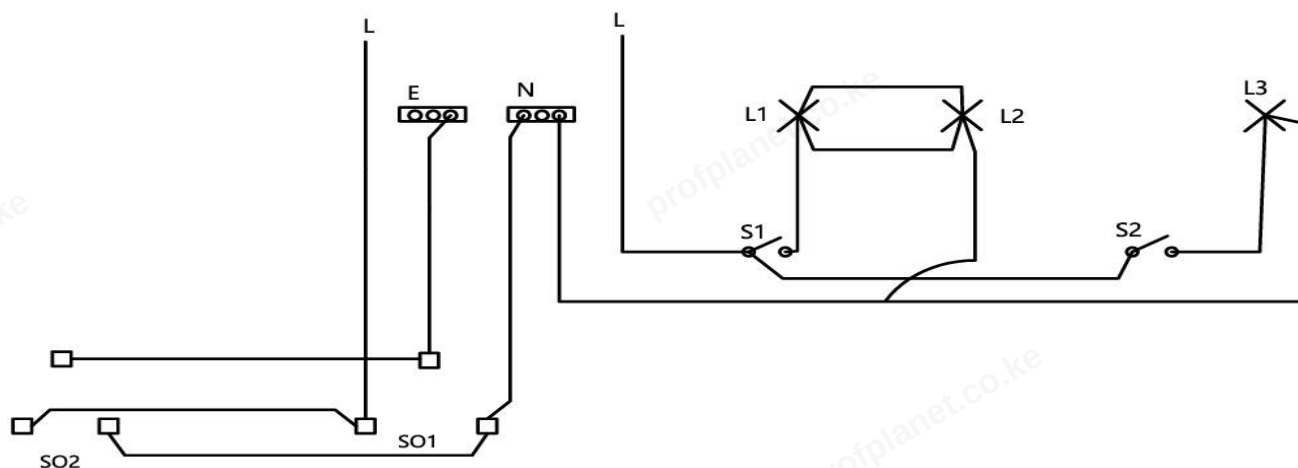
Assessment Date:	
Assessment Venue:	

PRACTICAL CHECKLIST

No.	Items of Evaluation	Max Marks	Awarded
1.	Wore PPE • Overall • Safety boots <i>(Award 1 marks each or zero)</i>	1 1	
2.	Applied good housekeeping practice i. Ensured clean working area before beginning working. <i>(Award 1 or 0)</i> ii. Tidy working area arrangement <i>(Award 1 or 0)</i> iii. Proper Waste disposal <i>(Award 1 or 0)</i>	1 1 1	
3.	Observed color code <i>(Award 1 or 0)</i>	1	
4.	Drew wiring diagram as per layout diagram i. At the C.C.U <i>(Award 2 or 0)</i> ii. Main earth terminal <i>(Award 2 or 0)</i> iii. Lighting <i>(Award 2 or 0)</i> iv. Power sockets <i>(Award 2 or 0)</i> v. Earthing <i>(Award 2 or 0)</i>	2 2 2 2 2	
5.	Installed and wired the final circuits correctly. i. Good utilization of the installation board Layout <i>(Award 2 or 0)</i> ii. Measurements $\pm 2\text{mm}$ <i>(Award all 10 x 1)</i> iii. Fixed components; • Level <i>(Award any 6 x 1)</i> • Firmness <i>(Award any 6 x 1)</i>	2 10 6 6	

6.	Fixed Sheathed cable flat on the surface i. Horizontal (<i>Award 2 or 0</i>) ii. Vertical (<i>Award 2 or 0</i>)	2 2	
7.	Spaced Cable clips uniformly (<i>Award 3 or 0</i>)	3	
8.	Terminated cable correctly (twisted, folded firmly) and correct circuit connections at: i. C.C.U (<i>Award 2 or 0</i>) ii. Lamps (<i>Award 1 marks for each correct lamp connection 3x1</i>) iii. Switches (<i>Award 2 marks for each correct switch connection 2x2</i>) iv. Socket outlets (<i>Award 2 marks for each correct socket connection 2x2</i>)	2 3 4 4	
9.	Performed; i. Continuity test (<i>Award 2 or 0</i>) ii. Polarity test on the lighting circuit (<i>Award 2 or 0</i>) iii. Insulation resistance test (<i>Award 2 or 0</i>)	2 2 2	
	TOTAL	66	
REMARKS:			

NB: Photos and videos should be taken as the candidate performs items 6 and 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 environmental factors that may affect the lifespan of PVCsheathed cables.	Excessive heat, moisture exposure. (1 mark each = 2 marks)	2	
2	List THREE common faults that may occur in PVC cable joints.	Loose connections, insulation breakdown, and corrosion at joint. (1 mark each = 3 marks)	3	
3	State TWO advantages of using compression joints on PVC-sheathed conductors.	Provides strong mechanical grip, maintains low contact resistance. (1 mark each = 2 marks)	2	
4	Name the instrument used to detect short-circuits in PVC cable installations.	Multimeter (short-circuit testing function). (1 mark each = 2 marks)	2	
5	State TWO PPE required when cutting PVC-sheathed cables.	Safety goggles (1 mark each = 2 marks)	2	
6	State TWO reasons why proper insulation must be restored after making a PVC cable joint.	Prevent electric shock, avoid moisture ingress. (1 mark each = 2 marks)	2	
7	Give THREE examples of accessories used to terminate PVC-sheathed cables.	Cable glands, lugs, and connectors/terminal blocks. (1 mark each = 3 marks)	3	
8	State TWO reasons for securing PVCsheathed cables firmly on mounting surfaces.	To prevent sagging, to avoid mechanical damage. (2 marks each = 2 marks)	4	
9	Name ONE method used to route PVC-sheathed cables neatly inside distribution boards.	Use of cable trunking / cable management ducts. (1 mark each = 1 mark)	1	

10	State TWO precautions to observe when tightening cable lugs onto PVC conductors.	Ensure proper crimping, avoid twisting the conductor. (1 mark each = 2 marks)	2	
11	State TWO reason why conductors must be colour-coded in PVCsheathed cable installations.	To ensure correct identification and polarity. (1 mark each = 2 marks)	2	
	Total Oral		25	

SUMMARY OF ASSESSMENT

SECTION	Total Marks	Marks Awarded
Assessment 1	39	
Assessment 2	34	
Assessment 3	66	
TOTAL	139	
Percentage %	$\frac{x}{139} \times 100$	

ORAL ASSESMENT

Oral assessment	25	
Percentage %		

ASSESSMENT 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%