

071906T4AEN

AGRICULTURAL ENGINEERING LEVEL 6

ENG/OS/AGR/CR/07/6/A

Apply Renewable Energy Technology in Agriculture

March/April 2025



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

PRACTICAL ASSESSMENT

INSTRUCTIONS TO ASSESSOR

1. Assess the candidate as the practical progresses observing the critical areas
2. You are required to mark the practical as the candidate perform the tasks
3. You are required to take video clips at critical points
4. Ensure the candidate has a name tag and registration code at the back and front

OBSERVATION CHECKLIST

Candidate's Name & Registration Code			
Assessors Name & Registration Code			
Venue of Assessment			
Date of Assessment			
Items to be Evaluated: <i>Please award marks as appropriate. Give a brief comment on your observation.</i>	Marks Available	Marks Obtained	Comments
TASK 1: Assemble a solar lighting system.			
1. Observed safety and health precautions as per workshop practice. Wore PPEs (safety boots, overall, and gloves). <i>(Award 1 mark for each correctly worn PPE max 3 marks)</i>	3		
2. Gathered tools and materials required as per the task <i>(Award 2 marks for assembling the correct tools)</i>	2		
3. Identified the correct site as per the structural requirements. <i>(Award 1 mark for correct identification)</i>	1		
4. Tested the functionality of the components as per the component's manuals. Battery Charge controller Solar panel <i>(Award 1 mark for each component checked correctly)</i>	3		
5. Checked tools and equipment for usability and compatibility as per manufacturer's	2		

instructions. • Ensured proper functioning of the equipment before service (Award 2 marks or zero)			
6. Installed the Charge Controller and Inverter as per manual • Charger controller • Inverter (Award 2 marks for controller and 2 marks for inverter or zero)	4		
7. Mounted the Solar Panel as per manufacturer's instructions. • Orientation to the sun • Secured fixing • Identified the terminals • Safety handling of the panel (Award 2 marks for each correct activity or zero)	8		
8. Wired the system as per the design drawings • Measured the correct length of wire to be used • Connected the solar panels to the charge controller • Connected the charge controller to the battery. (Award 2 marks for each correct activity or zero)	6		
9. Connected battery to a dc bulb as per the design drawings • Installed conduits and secured them	5		

• Installed switch • Connected wires • Battery to the switch • switch to the junction box • Junction box to bulb <i>(Award 1mark for each correct activity or zero)</i>			
10. Tested the functioning of the System as per the technical manual • Turned on solar power system • Checked to make sure the wiring is done appropriately. • Checked if the bulb was lighting <i>(Award 2 marks or zero for each activity)</i>	6		
11. Finished within the specified time frame <i>(Award 2 marks the correct activity or zero)</i>	2		
12. Cleaned work station and managed waste disposal as per workplace policy • Wiped surfaces • Disposed of waste • Returned the tools to the store <i>(Award 1 mark for each correct action taken or zero)</i>	3		
13. Managed and disposed non-recyclable supplies as per manufacturer's instructions, workplace policy and legal requirements • Disposed non-recyclables e.g wire cables <i>(Award 1 mark for correct action or zero)</i>	1		
14. Proper use of tools and equipment as per workplace policy	2		

(Award 1 mark for tools and 1 for equipment or zero)			
15. Adhered to safety work place procedures according to instructions (Award 2 marks or zero)	2		
GRAND TOTAL	50		
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%)			
Feedback from the Candidate:			
Feedback to the Candidate:			
Candidate Signature		Date:	
_____		_____	
Assessor's Signature		Date	
_____		_____	