

071906T4AEN

AGRICULTURAL ENGINEERING LEVEL 6

ENG/OS/AGR/CR/08/6/A

Install Refrigeration and Air Conditioning Systems

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: Design air conditioning system for a client			
1. Wore PPE'S as per SOPs <ul style="list-style-type: none"> • Apron/dust coats • Gas masks • Safety boots • Gloves <i>(Award 1 mark each)</i>	3		
2. Assembled tools and materials as per the task <i>(Award 1 mark each)</i>	2		
3. Designed air conditioning system i.e <ul style="list-style-type: none"> • A Refrigerant flow rates. • Type of refrigerant used. • Kind of application viz air-conditioning, refrigeration, dehumidification etc. • The operation design parameters. • The system equipment/ components required to be used in the system. <i>(Award 2 marks each)</i>	10		
4. Designed working drawing as per the installation requirement <ul style="list-style-type: none"> • Location of power supply • Suitable location of fixing the air conditioner. • Installation costing <i>(Award 1 mark each)</i>	3		

5. Designed air conditioning system structure <ul style="list-style-type: none"> • Brackets • Pipe fittings • Bolts and nuts/screws • Suspension cables/ chain • Hangers • Frames <i>(Award 1 mark for any 4)</i>	4		
Sub-Total 1	22		
TASK 2: Install electrical wiring for the air conditioning System			
6. Selected appropriate electrical devices / materials as per task <ul style="list-style-type: none"> • Expansion bolt • Electrical cable • Electrical rails • Circuit breakers • Service grounding • Service outlet • Service plug • Switches • Sockets • Plastic tubing • Masonry materials (e.g. cement, sand, etc.) <i>(Award ½ mark each)</i>	5		
7. Selected appropriate tools as per the task <ul style="list-style-type: none"> • Measuring tools • Spirit level • Screw drivers • Hammers (claw and ballpein) • Electric drills • Drill bits • Masonry tools (e.g. trowel, spade, level, etc.) 	4		

<ul style="list-style-type: none"> Hacksaw (Award ½ mark each) 			
Sub-Total 2	9		
TASK 3: Install split type air conditioning system on the wall and test for operation			
8. Fixed wall bracket <ul style="list-style-type: none"> Marked the screw points with a mark pen Leveled the bracket with a spirit level Drilled the holes Placed expansion bolts Fixed the screws/ bolts (Award 2 marks each) 	10		
9. Installed the split type air conditioner to the bracket (Award 2 marks)	2		
10. Adhered to manufacturer's manual instructions. <ul style="list-style-type: none"> Installation site selection Orientation Measurements /dimensions Handling (Award 1 mark each) 	4		
11. Tested for operation <ul style="list-style-type: none"> Plugged in the socked and switched on (Award 2 marks) 	2		
12. Observed safety for self and others (Award 1 mark)	1		
Sub-Total 3	19		
GRAND TOTAL	50		
ASSESSMENT OUTCOME			

The candidate was found to be:	
Competent <input type="checkbox"/>	Not yet Competent <input type="checkbox"/>
<i>(Please tick as appropriate)</i>	
<i>(The candidate is competent if the candidate obtains at least 50%)</i>	
Feedback from the Candidate:	
Feedback to the Candidate:	
Candidate Signature	Date:
_____	_____
Assessor's Signature	Date
_____	_____