

071906T4AEN

AGRICULTURAL ENGINEERING LEVEL 6

ENG/OS/AGR/CR/06/6/A

Perform Irrigation Activities

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			
Assessor's 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: Measure infiltration rate of the soil			
Step 1: Field Test Set-Up			
1. Wore the appropriate PPE's. <ul style="list-style-type: none"> Overall/dustcoat Safety boots / gumboots <i>(Award 1 mark each)</i>	2		
2. Assembled tools as per the task <i>(Award 1 mark or 0)</i>	1		
3. Experimental set-up <ul style="list-style-type: none"> Selected suitable site Leveled the site Hammered the 30 cm diameter core ring in vertical position to 15cm depth into the soil Kept the side of the 30 cm diameter core ring vertical and drove the measuring rod into the soil so that approximately 12 cm is left above the ground. Hammered using the right tools and 	2 2 2 2 2		

procedure <ul style="list-style-type: none"> Hammered the 60 cm diameter core ring in vertical position to the same height as 30 cm diameter core ring into the soil Placed the hessian cloth inside the infiltrometer to protect the soil surface when pouring in the water Hammered using the right tools and procedure <i>(Award 2 marks each or 0)</i>	2		
4. Poured water into the core ring <ul style="list-style-type: none"> ✓ Poured into the 30cm core ring ✓ Powered water into the space between the 30cm core ring and 60cm core ring ✓ Ensured the height of water is between 7-12cm <i>(Award 1 mark each or 0)</i>	3		
5. Observed safety <i>(Award 1 mark each or 0)</i>	1		
Sub Total 1	23		
TASK 2: Collect data on infiltration depths and time and record on the data sheet provided			
6. Recorded initial reading in the correct column in the table <i>(Award ½ mark for each of the eight readings per time interval stated)</i>	4		
7. Recorded final reading in the correct column in the table	4		

(Award $\frac{1}{2}$ mark for each of the eight readings per time interval stated)			
Sub Total 2	8		
TASK 3: Calculate cumulative time, depth and infiltration rate of the soil			
8. Calculated cumulative time • Correct computation of cumulative time (Award $\frac{1}{2}$ mark for each of the eight-values computed)	4		
9. Calculated infiltration depths (Award $\frac{1}{2}$ mark for each of the eight-values computed)	4		
10. Calculated infiltration rate in cm/min (Award $\frac{1}{2}$ mark for each of the eight values computed)	4		
11. Calculated infiltration rate in cm/hr (Award $\frac{1}{2}$ mark for each of the eight values computed)	4		
12. Calculated cumulative infiltration depth (Award $\frac{1}{2}$ mark for each of the eight values computed)	4		
Sub Total 3	20		
TASK 4: Plot a curve of cumulative infiltration depth against cumulative time			
13. X-axis labelled with correct unit (Award one mark or zero)	1		
14. Y-axis labelled with correct unit (Award one mark or zero)	1		
15. X-axis with consistent scale (Award one mark or zero)	1		

16. Y-axis with consistent scale (Award one mark or zero)	1		
17. Plotted at least six points correctly (Award 1 mark for each correct plotted point)	6		
18. Points joined with smooth curve (Award 1/2 mark for each point maximum 4 marks)	4		
19. Graph given a suitable title (Award 2 marks or zero)	2		
20. Curve takes up at least $\frac{3}{4}$ of graph paper (Award 2 marks or zero)	2		
21. Cleaned self	1		
Subtotal 4	19		
Total	70		
ASSESSMENT OUTCOME			
The candidate was found to be: <div style="text-align: center;"> Competent <input type="checkbox"/> Not yet competent <input type="checkbox"/> </div> (Please tick as appropriate) <i>(The candidate is competent if the candidate obtains at least 50%)</i>			
Feedback from candidate:			
Feedback to candidate:			
Candidate's Signature		Date	
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Assessor's Signature	Date
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