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INDUSTRIAL AUTOMATION AND ROBOTICS TECHNICIAN LEVEL 6

ENG/OS/IA/CR/09/6

Install and Maintain Supervisory Control and Data Acquisition

July/August 2025

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

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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			
(Indicate the marks available and marks obtained respectively. Award marks appropriately as guided for in the items for evaluation indicated. Give a brief comment where necessary)			
Items to be Evaluated:	**Marks Available**	**Marks Obtained**	**Comments**
Task 1: Installed the SCADA system			
1. Observed occupational health and safety. • Safety boots • Overall / dust coat *Award 1 mark for each PPE worn.*	**2**		
2. Identified the input and output components and wired to the PLC. • Forward/Reverse push button switches • Forward/Reverse limit switch • Indicator lamp • Proximity/Capacitive sensors • 24vdc motor *Award 1 mark each*	**5**		
3. Wired the system circuit correctly: • Correct power circuit wiring. • Correct connection of input devices (switches and sensors). • Correct connection of output devices (indicator and motor) *Award 2 marks for each*	**6**		

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4. Correctly powered the; • PLC • HMI *Award 1 mark for each*	**2**		
Sub Total 1	**15**		
Task 2: configured the PLC			
5. Configured PLC hardware *Award 4 marks*	**4**		
6. Developed a PLC program for the task. *Award 8 marks for correct PLC program*	**8**		
7. Downloaded the program to the PLC successfully. *Award 2 marks for correct PLC configuration and 2 marks for downloading*	**4**		
Sub Total 2	**16**		
Task 3: Configured the SCADA System			
8. Selected the correct PC station *Award 4 marks for correct configuration or else 0*	**4**		
9. Configure HMI application *Award 4 marks for correct configuration or else 0*	**4**		
10. Configured communication modules *Award 2 marks for correct procedure*	**2**		
11. Created a new project in the HMI *Award 2 marks for correct procedure*	**2**		
12. Linked SCADA/HMI graphics to the following PLC tags.			

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• Closing push button • Opening push button • Indicator lamp • Motor forward • Motor reverse *Award 1 mark each*	**5**		
13. Configured HMI graphics with the PLC tags that responded to commands accordingly. *Award 1 mark for each, 3 correct icons* *And 1 mark for command response*	**4**		
14. Downloaded the SCADA program into the HMI successfully *Award 2 marks for correct program downloading*	**2**		
15. Backed up the SCADA program. *Award 2 marks for correct procedure*	**2**		
Sub Total 3	**25**		
Task 4: Tested functionality of the program			
16. Tested the system functionality as specified: • The gate responded to manual input and output device as specified • SCADA virtual devices responded as specified *Award 5 marks each*	**10**		
17. Correct use of the tools and instruments. *Award 4 marks*	**4**		
18. Switched off the system and power supply after the allocated tasks were done.			

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• Switched off the system and power supply • Disconnected everything according to SOP *Award 2 marks*	**2**		
19. Organized neatly the workplace and demonstrated good housekeeping. • Neat organization • Proper housekeeping *Award 2 marks*	**2**		
Sub-Total 4	**18**		
GRAND TOTAL	**74**		
% = $\frac{x}{74}$ X 100	**100**		

ASSESSMENT OUTCOME

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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**
_____	_____

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