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INDUSTRIAL AUTOMATION AND ROBOTICS TECHNICIAN LEVEL 6

ENG/OS/IA/CR/03/6

Develop and Maintain Data Communications Systems

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			
Items to be Evaluated: *Please award marks as appropriate. Give a brief comment on your observation.*	**Marks Available**	**Marks Obtained**	**Comments**
Task 1: Installation of the system			
1. Wore personal protective gear • Overall/dust coat • Safety boots *(Award 1 mark each)*	**2**		
2. Correctly installed • Power supply module • P.L.C module • Conveyor belt • Relay • Motor • Pushbuttons • Inductive sensor *(Award 1 mark each)* *Note: there are two pushbuttons*	**8**		
3. Used the provided tools correctly • Screw drivers • Stripper • Side cutter • Multimeter *(Award 1 mark each)*	**4**		
4. Installed the system neatly	**2**		

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• Used zip ties to secure wires • Correctly terminated wire *(Award 1 mark each)*			
SUB TOTAL 1	**16**		
Task 2: Development of P.L.C Program			
5. Opened relevant programming software and started a new project/file *(Award 1 mark)*	**1**		
6. Developed the program as per the algorithm provided • Start pushbutton starts the system • Inductive sensor starts conveyor • Conveyor stops after five objects have been collected in the bin • Conveyor restarts after 1 min • Sequence repeats until stop push button is pressed *(Award 1 mark for each translation)*	**5**		
7. Simulated the program using PLC sim • Ensured correct logic of the program • Debugged any errors *(Award 2 marks each)*	**4**		
8. Properly documented the code • Provided comments for every program block *(Award 2 marks)*	**2**		
SUB TOTAL 2	**12**		
Task 3: Test, Maintain and Commission the System			
9. Powered the system as per the standard operating procedures (SOPs)	**2**		

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• Ensured all components were correctly installed • Powered the system as per the (SOPs) *(Award 1 mark each)*			
10. Downloaded developed program to the P.L.C module • Connected programming cable correctly • Established connection between P.C and P.L.C • Put P.L.C in the correct mode • Successfully downloaded program to P.L.C *(Award 1 mark each)*	**4**		
11. Operated the system in the sequence • Start pushbutton starts the system • Inductive sensor starts conveyor • Conveyor stops after five objects have been collected in the bin • Conveyor restarts after 1 min • Sequence repeats until stop pushbutton is pushed *(Award 1 mark each item in the sequence, and 1 mark for the correct sequence)*	**6**		
SUB TOTAL 3	**12**		
Task 4: Send System Status to P.C			
12. Configured O.P.C server • Configured the P.L.C to send data to the P.C • Configured the P.C to be storage *(Award 2 marks each)*	**4**		
13. Retrieved and formatted stored data *(Award 1 mark for retrieving data and 2 marks for formatting it into an excel file)*	**3**		
14. Saved data file with credentials *(Award 1 mark)*	**1**		

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SUB TOTAL 4	**8**		
Task 5: Perform Housekeeping			
15. Disconnected the components as per the standard operating procedures *(Award 2 marks)*	**2**		
16. Correctly stored the components *(Award 2 marks)*	**2**		
17. Cleaned up work area after the practical *(Award 2 marks)*	**2**		
SUB TOTAL 5	**6**		
GRAND TOTAL	**54**		
% = $\frac{x}{54}$ 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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