

071605T4MCT

MECHATRONICS TECHNOLOGY LEVEL 5

ENG/OS/MC/CR/04/5/A

Operate Robotic and Automated Systems

March/April 2025



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

PRACTICE

MENT

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
1. Observed occupational health and safety by wearing: i. Overall ii. Safety boots <i>(Award 1 Mark for each)</i>	2		
Sub-Total 1	2		
TASK 1: COMPONENT IDENTIFIC			
2. Identified the following components i. 24V DC motor ii. Start push button iii. Stop push button iv. Indicator lamps v. Inductive sensor vi. PLC vii. 24V Power supply <i>(Award 1 Mark for each)</i>	7		
Sub-Total 2	7		
TASK 2: INSTALLATION			
3. Connected the following components to the PLC; i. 24V DC motor	12		

ii. Start push button iii. Stop push button iv. Indicator lamps v. Inductive sensor vi. 24V Power supply <i>(Award 2 Marks for each)</i>			
4. Used tools and as required. <i>(Award 3 Marks or zero)</i>	3		
Sub-Total 3	15		
TASK 3: PLC PROGRAMMING			
5. Identified and opened PLC developer software. <i>(Award 2 Marks or 0)</i>	2		
6. Connected the programming cable to computer and PLC module. <i>(Award 2 Marks or 0)</i>	2		
7. Keyed the ladder program to the PLC <i>(Award 3 Marks or 0)</i>	3		
Sub-Total 4	7		
TASK 4: SYSTEM TESTING AND OPERATION			
8. Turned on the system following SOP. <i>(Award 2 Marks or 0)</i>	2		
9. The system operated as follows; - Pressing the start push button turns the yellow indicator lamp ON. - Placing a metallic object in front of the inductive sensor turns the green lamp ON and the motor rotates for 5 seconds and then stops for 5 seconds.	9		

The sequence repeats until when the stop button is pressed and the red lamp turns ON. <i>(Award 3 Marks for each operation)</i>			
10. Performed housekeeping. <i>(Award 2 Marks for neatness and disconnection of circuits after assessment or 0)</i>	2		
Sub-Total 5	13		
GRAND TOTAL	44		
ASSESSMENT OUTCOME			
The candidate was found to be: Competent Not yet Competent <i>(Please tick as appropriate)</i> <i>(The candidate is competent if the candidate is competent for at least 50%)</i>			
Feedback from the Candidate:			
Feedback to the Candidate:			
Candidate Signature		Date:	
_____		_____	
Assessor's Signature		Date	
_____		_____	

APPENDIX: TO BE PRINTED FOR ASSESSOR ONLY

The system is required to operate as follows:

- a. When the start push button is pressed, the yellow indicator lamp turns ON.
- b. When a metallic object is placed in front of the sensor, the green lamp turns ON and the motor rotates for 5 seconds and then stops for 5 seconds.
- c. The sequence repeats until when the stop button is pressed and the red lamp turns ON.