

071605T4MCT

MECHATRONICS TECHNOLOGY LEVEL 5

ENG/OS/MC/CR/03/5

Maintain Mechatronic Systems Instrumentation and Control

July/August 2025



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

PRACTICAL ASSESSMENT

ASSESSOR'S GUIDE

INSTRUCTIONS TO THE ASSESSOR

- i. You are required to mark the practical as the candidate perform the tasks.
- ii. You are required to take photos and/or video clips at critical points.
- iii. Ensure the candidate has a name tag and registration code at the back and front.
- iv. The candidate should not have any written material.

This guide consists of FOUR (4) printed pages.

**Assessor should check the guide to ascertain that all the pages are printed as indicated
and that no questions or answers are missing.**

OBSERVATION CHECKLIST

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Candidate's name:**Registration No:****Assessor's name****Reg. 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 Allocated	Marks Obtained	Comments
1. Wore PPEs. i. Safety boot; ii. Overall/dust coat (Award 1 x 1 marks)	1 1		
2. Identified tools and equipment for circuits installation. (Award 1 x 1 marks)	1		
3. Correct identification and wiring of compo i. Switches; ii. Asynchronous motor; iii. Capacitive Sensor; iv. VFD drive. (Award 2 x 1 marks)	2 2 2 2		
4. Installed capacitive sensor and the 3 switches as per the design. (Award 4 x 1 marks)	4		
5. Installed variable frequency drive correctly and connected all the contacts to the required PLC output contact. (Award 4 x 1 marks for each VFD contacts wired)	4		
6. Copied PLC program into the programming software and troubleshoot errors. (Award 2 x 1 marks)	2		
7. Uploaded program to the PLC. (Award 1 x 1 marks)	1		
8. Set VFD parameters as per the manual.			

(Award 1 mark for use of VFD manual and 2 marks for parameter setting)	3		
9. Measured the capacitive output voltage using multimeter. (Award 2 marks for correct use of multimeter)	2		
10. Wired power circuit and terminated the motor properly. (Award 1 mark for correct circuit, 1 mark for correct termination)	2		
11. Carried out testing and validation of the control system and did tuning according to system specification. (Award 3 marks for correct testing or 0)	3		
12. Carried out specified rotation speed measurement using tachometer: i. Forward-start speed ii. Low speed iii. Medium speed iv. High speed (Award 4 x 2 marks)	2 2 2 2		
13. Documented the findings. (Award 3 or 0 marks)	4		
14. Observed proper housekeeping: i. Maintained the working space clean; ii. Kept the materials and tools organized. iii. Disassembled tools correctly. (Award 3 x 1 marks)	1 1 1		

PRODUCT CHECKLIST			
Items to be evaluated:	Marks Allocated	Marks Obtained	Comments
15. Motor run forward on pressing and holding SW1. (Award 3 marks or 0)	3		
16. Variation in motor speed on activating SW2 with sensor deactivated. (Award 3 marks or 0)	3		

17. Change in motor speed on activating SW3 with sensor enabled. (Award 3 marks or 0)	3		
TOTAL	54		
The candidate was found to be: Competent ☐ Not yet competent ☐ (Please tick as appropriate) <i>The candidate is competent if s/he gets 50% of the marks on the observation and product checklist</i>			
Feedback from candidate:			
Feedback to candidate:			
Candidate's signature:	Date:		
Assessor's signature:	Date:		