



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

Qualification Code : 071606T4MCT
Qualification : Mechatronics Technician Level 6
Unit Code : ENG/OS/MC/CR/02/6/A
Unit of Competency : Install mechatronic systems

PRACTICAL ASSESSMENT

INSTRUCTIONS TO THE ASSESSOR

1. You are required to mark the practical as the candidate perform the tasks.
2. You are required to take photos and/or video clips at critical points.
3. Ensure the candidate has a name tag and registration code at the back and front.

OBSERVATION CHECKLIST

| | |
|--|------------------------------------|
| Candidate's name & Registration No. | |
| Assessor's name & Reg. Code | |
| Unit(s) of Competency | Install mechatronic systems |
| 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. Designed circuit diagram according to engineering and user specifications | 1 | | |
| 2. Identified wiring Materials according to the circuit diagram specifications | 3 | | |
| 3. Identified tools and equipment according to the job requirement | 2 | | |
| 4. Laid out wiring materials according to the circuit diagram | 3 | | |
| 5. Installed mechanical units of wiring according to prescribed method of installation | 1 | | |
| 6. Installed electrical system according to circuit diagrams design and user requirement | 2 | | |
| 7. Tested and commissioned electrical wiring for desired operation according design specifications | 1 | | |
| 8. Designed piping diagram according to user specifications | 1 | | |
| 9. Inspected piping materials according to specifications | 1 | | |

| | | | |
|--|----------|--|--|
| 10. Identified piping tools and equipment according to the system requirement | 2 | | |
| 11. Installed piping system for mechatronic system according to user specifications | 3 | | |
| 12. Inspected and tested piping system and tested according to system functionality | 1 | | |
| 13. Designed circuit diagram according to engineering and user specifications | 1 | | |
| 14. Identified wiring Materials according to the circuit diagram specifications | 1 | | |
| 15. Developed working diagram according user specifications | 2 | | |
| 16. Identified and inducted mechanical equipment and structure according to system specification | 1 | | |
| 17. Installed mechanical machines/equipment according to the user manual | 2 | | |
| 18. Inspected, tested and commissioned mechanical systems according to the desired functionality | 1 | | |
| 19. Inspected individual components of mechatronic system according to system functionality | 1 | | |
| 20. Identified appropriate tools and equipment for the system assembly mechatronic system | 2 | | |

| | | | |
|---|----------|--|--|
| 21. Assembled individual components to form a mechatronic system according to functionality of the system | 3 | | |
| 22. Identified relevant testing tools and equipment according to system manuals | 2 | | |
| 23. Tested mechatronic system according to system functionality specifications | 3 | | |

PRODUCT CHECKLIST

| Items to be evaluated: | Marks Allocated | Marks Obtained | Comments |
|-----------------------------------|--------------------|-------------------|----------|
| 24. Integrated mechatronic system | 1 | | |
| 25. Housekeeping | 1 | | |
| TOTAL | 42 | | |

The candidate was found to be: Competent Not yet competent

(Please tick as appropriate)

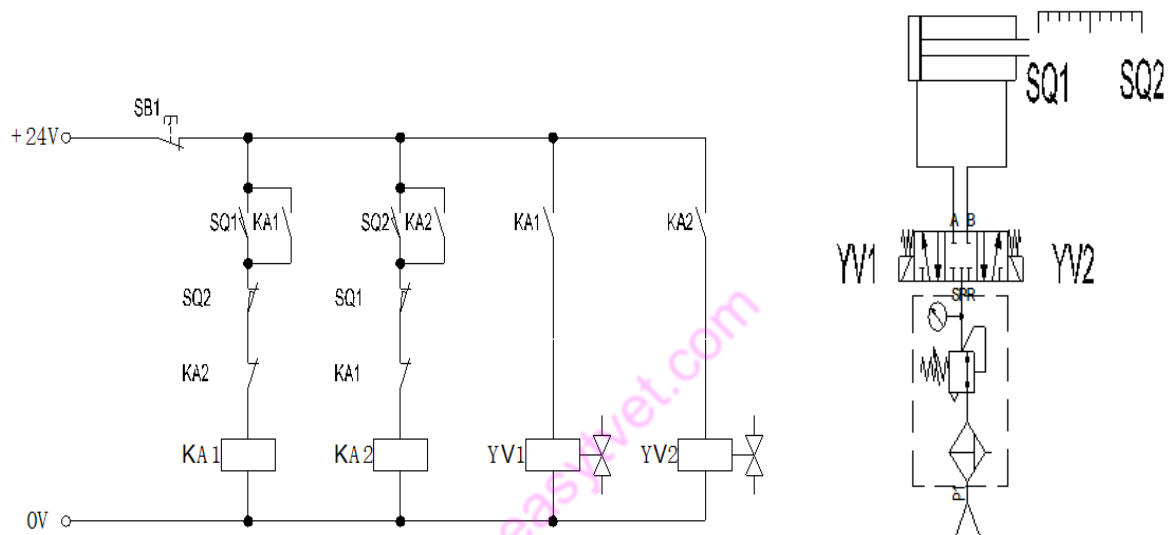
(The candidate is competent if s/he gets 21 marks (50%) of the 42 marks on the observation and product checklist)

Feedback from candidate:

Feedback to candidate:

| | | |
|-------------------------------|--------------|--|
| Candidate's signature: | Date: | |
| Assessor's signature: | Date: | |

EXPECTED CONTROL



Principle statement:

- Press the self-lock button SB1 to connect 24V power supply, press the self-reset button SB2, the coil of the relay KA1 energized, its commonly on contact close, the solenoid valve coil energized, the cylinder extended,
- after extending the press stroke switch SQ1, the coil of the relay KA1 loss power, its NO contact break off, NC contact close, relay KA2 coil energized, its NO contact close, the right coil of the solenoid valve energized, the cylinder retrace back,
- after retracting the press stroke switch SQ2, the coil of the relay KA2 loss power, its NO contact break, NC contact close, relay KA1 coil energized, the cylinder will extend out, cycle as such.