

071605T4MCT

MECHATRONICS TECHNOLOGY LEVEL 5

ENG/OS/MC/CR/05/6/A

Operate Programmable Logic Control (PLC) Systems

March/April 2025



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

PRACT 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:			
Assessor's 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. Wore personal safety gear. i. Overall/dust coat. ii. Safety boots. <i>(Award one mark for each basic gear. 2x1).</i>	2		
2. Observed electrical safety rules. i. Disconnected from the mains before doing any wiring. <i>(Award 1 mark)</i>	1		
Sub-total 1			
TASK 1: WIRED THE PLC CIRCUIT			
3. Installed circuit as per the specifications. i. Power connection ii. Buttons iii. Indicator lamps iv. PLC <i>(Award 2 marks for each connected component. 4x2)</i>	8		
4. Tested short circuit in the installed circuit with a multimeter. <i>(Award 2 marks for the measurements or 0)</i>	2		
5. Powered the PLC ON <i>(Award 1 mark for powering)</i>	1		
Sub-total 2	11		

TASK 2: PLC PROGRAMMING			
6. Copied the ladder program on the provided software as per the specifications. (Award 2 marks for each rung copied.5x2)	10		
7. Set the PLC to programming mode before downloading the program. (Award 2 marks or 0)	2		
8. Connected programming cable. (Award 2 marks for correctly connected cable or 0 marks)	2		
9. Downloaded the program to the PLC. (Award 3 marks or 0 marks)	3		
10. Set the PLC to running mode after loading program. (Award 1 mark or 0)	1		
11. Operated/ran the PLC system as per the provided specifications:			
12. Recorded the following observations: i. When the start push button is pressed, the green lamp turns ON for 10 seconds. ii. The green lamp turns off after 10 seconds, and the orange lamp turns ON for five seconds. iii. After five seconds, the orange lamp turns OFF, and the red lamp turns ON for 10 seconds. The sequence is repeated until the stop button is pressed. iv. The cycle is repeated as long as the stop button is not pressed. v. Pressing the stop push button at any time causes the system to stop. (Award 2 marks for each 5x2)	10		

Sub-total 3	30		
TASK 3: PERFORM HOUSEKEEPING			
1. Disconnected the components, and returned all the used materials and devices to their storage after assessment. (Award 2 marks or 0)	2		
2. Performed housekeeping. (Award 2 marks or 0)	2		
Sub-total 4	4		
Total	48		
Overall score $\left(\frac{x}{48} \times 100\%\right)$			
The candidate was found to be: Competent ☐ competent ☐ (Please tick as appropriate) (The candidate is competent if the candidate is competent in at least 50% of the overall score.)			
Feedback from the candidate:			
Feedback to the candidate:			
Candidate's Signature		Date	
_____		_____	
Assessor's Signature		Date	
_____		_____	

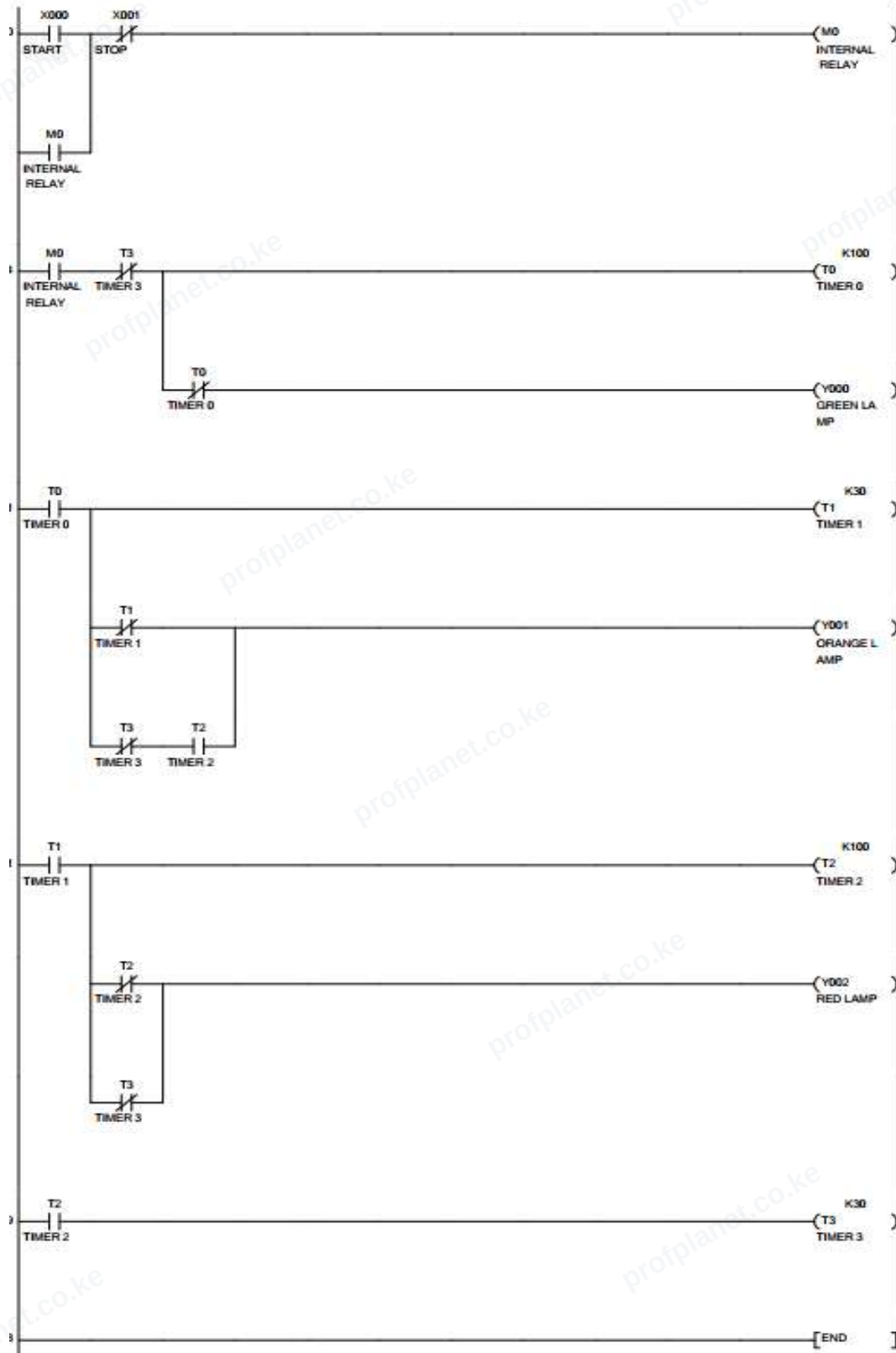


Figure 1: Ladder Program