

071606T4MCT

MECHATRONIC TECHNOLOGY LEVEL 6

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

Carry Out Mechatronic Programming

March/April 2025



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

PRACT MENT

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INSTRUCTIONS TO CANDIDATE:

1. A robot arm is expected to perform pick and place operation as follows:
 - i. When the START push switch is pressed, the system is powered, and the GREEN lamp turns ON.
 - ii. When an object (workpiece) is introduced at the fiber optic sensor, the robotic arm moves down and picks the workpiece.
 - iii. It then moves up and makes a 90-degree rotation at the base of the robotic arm.
 - iv. Then, the robotic arm moves down and drops the workpiece on the working table.
 - v. After 6 seconds, the robotic arm returns to pick the second workpiece to make another cycle.
 - vi. After completing the third cycle, the system turns on a RED LED

You are expected to perform the following tasks:

TASK 1: Perform electrical connections.

TASK 2: Program the robot arm.

TASK 3: Operate the system.

2. You are provided with the following resources:

- i. DLFA-JXS6 industrial manipulator training system consists of the robotic arm, sensors, solenoid valves, and power supply
- ii. Green LED
- iii. Red LED
- iv. Start switch
- v. PLC module
- vi. PLC communication cable
- vii. Air pipes
- viii. Computer installed with PLC programming software
- ix. Multimeter
- x. Set of screwdrivers and Allen keys
- xi. Connecting wires
- xii. Wire stripper