

071306T4ELC

ELECTRONICS ENGINEERING LEVEL 6

ENG/OS/ET/CR/05/6/A

Perform Industrial Automation

Nov/Dec 2024



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

PRACTICE

INSTRUCTIONS TO CANDIDATE:

1. You are required to perform the following task:
 - i) TASK: Programming a Programmable Logic Controllers
2. You have been provided with the following resources for the practical tasks:
 - i) Programmable logic controller (PLC)
 - ii) Programming device
 - iii) Multimeter
 - iv) 240V relay
 - v) 240V Bulbs (three different colours)
 - vi) Appropriate tools.

This paper consists of TWO (2) printed pages.

Candidate should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing.

Figure 1 shows a two roads junction. You are required to construct a traffic light control system using PLC for the junction to function as follows:

1. When activated, Green light in road A and Red light in road B goes ON for 25 seconds.
2. After 20 seconds, the Yellow lights in Road A and B goes ON for 5 seconds.
3. The Red light in road A and Green light in road B goes ON for 25 seconds.
4. After 20 seconds, the Yellow lights in Road A and B goes ON for 5 seconds and the cycle continues.

TASK: Programming a Programmable Logic Controllers

- i) Draw a block diagram to represent the circuit.
- ii) Install the circuit.
- iii) Write the program for the Programmable Logic Controllers.
- iv) Download the code to the system and test for functionality.

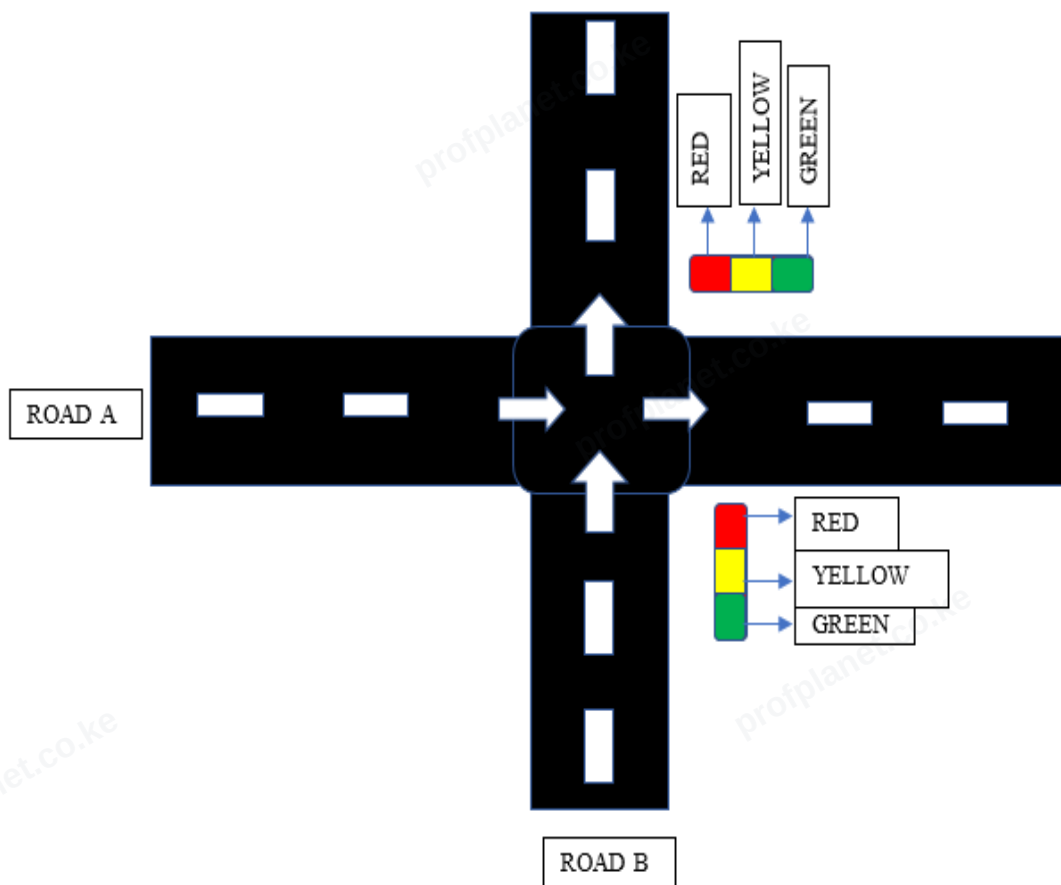


Figure 1

THIS IS THE LAST PRINTED PAGE.