**PROGRAMMABLE LOGIC CONTROLLERS**
**ASSIGNMENT No.4**

## NETWORKS AND ARCHITECTURE

## DETAILS

In this assignment you must produce a written report explaining all the items detailed below. You should read your notes, study textbooks and draw on any other source of information such as manufacturers catalogues.

1. Three styles of PLC's are known as ***UNITARY, MODULAR*** and ***RACK-MOUNTED.*** Explain what this means and what the relative advantages and disadvantages of each are. Include some pictures and diagrams to show what you mean. Try and find some examples at your work place.

2. What are typical switching voltages that may be applied to the inputs of a PLC? Describe at least FIVE types of sensors that could be connected to a PLC to enable it to control a typical industrial process (not analogue).

3. What are typical switching voltages that may be obtained from a PLC? Describe at least FIVE devices that may be controlled in an industrial process. Pictures and diagrams will be useful. Explain the purpose and principles of opto-isolators in PLC's.

4. Explain how a PLC stores a programme and executes it. You should explain the following.

    i. CPU
    ii. ALU
    iii. ROM
    iv. RAM
    v. Registers
    vi. Busses
    vii. Flags

Produce a diagram showing how the various parts of a PLC are connected both electrically and mechanically.

5. The following is a list of terms to do with how digital information is communicated between parts of a PLC and with external items such as programming panels and computers. Write a brief description of each and outline the advantages and disadvantages of each.

    i. Twisted pair.
    ii. Coaxial cable.
    iii. Fibre optics
    iv. Networks

You must complete this assignment within 4 weeks following the date it is issued.

6. Define the following and give an example of where each may be used.

    i. LAN
    ii. Ethernet
    iii. Intranet