Sheet No. 1
Introduction

I. Are the following statements true or false? Correct the false statements

1. Difficulty with changes or replacements is one of the most frequently mentioned disadvantages of a classic control panel.
2. Sequential control system cannot be a time-dependent and external-event dependent system in the same time.
3. Any change to a PLC program normally involves some change in wiring as well.
4. Low initial cost is considered one of the industrial automation advantages.
5. PLC based control systems require the use of interface cards.
6. A PLC system eliminates much of the hard wiring that was associated with conventional relay control circuits.
7. PLC control systems are more reliable and easier to troubleshoot than relay based control systems.
8. A PLC operates in real-time.
9. A proprietary PLC system allows the system to be connected easily to devices made by other manufacturers.
10. A fail-safe function of a control system means that system failure is impossible.
11. The function of an input module is to pass the incoming signals to the output module.

II. Complete the following statements.

1. A programmable logic controller (PLC) is a specialized _____ used to control machines and process.
2. The control plan stored in the PLC is called _____ .
3. _____ is a process of controlling any machine in a self-control way.
4. Sequential control system is a _____ if the step transition conditions are functions of time only; where it is an _____ where the step transition conditions are functions of Input signals only.

5. The target of automation technology is to increase the _____ and _____ of products, and to decrease the _____, _____ and _____.
6. When input module, CPU and output module are separate, this PLC can be called _____.
7. A _____ function of a control system is a design feature that in the event of a specific type of failure, inherently responds in a way that will cause no or minimal harm to other equipment, the environment or to people.
8. _____ is a control system in which the individual steps are processed in a predetermined order.
9. In PLC control system all equipment is wired to _____. Then, the control program inside the PLC provides the "wiring" connection between the devices, which is known by_____.
10. _____ are considered the input devices of the PLC, where _____ are the output devices.
11. As PLC output results must be produced in response to input conditions within a bounded time, PLC is considered as an example of a _____.
12. Inputs/Outputs of a PLC is information representing _____ that is received from sensing devices and _____ that are sent to actuating and indicating devices.

III. Answer the following questions

1. List five devices that would be typical inputs to a PLC. List five devices that a PLC might control.
2. What type of control system did the PLC replace? Why was the PLC better?
3. Give three examples of household problems that can be solved using PLC.