Basic principles of process control systems and automation – Automation systems

<u>Your Objectives:</u>

At the end of the course, you should be able to justify automation systems.

What is automation?

Historically speaking, [_____] meant those processes of

[_____] of work and production which were significantly modernized by the

[_____] revolution. Today, however, automation goes well beyond

mechanization as it involves, not solely the execution of tasks, but also quality-control and

[_____] tasks taken on by artificial systems insofar as the entire process now

involves the use of [_____] , control systems, etc., in order to optimize

production processes in the production of [_____] .

Modern automation systems used in [_____] consist of made-to-measure,

[_____] precise hardware and [_____] . components.

They are employed throughout, from single steps to complete processes, including

management, regulation and [_____] . Because of the good cost-

performance ratio and the [_____] , platform solutions that can be

[_____] . to certain requirements by both manufacturer and

[_____] have become very popular.

At [_____] the primary automated system used for process control is the Delta V Distributed Control System (DCS)®. It would be inane to address the complexities of such a [_____] system within these few pages. But briefly…

Delta V Distributed Control System®

Delta V was designed to apply automation to process [_____] . While the components of the system are [_____] on industry standards and use PC hardware and standard network configuration, each [_____] is customized to the user's needs. At Biogen's manufacturing locations, the appearance and functionality of Delta V, as well as the version implemented on premises, will largely vary according to the [_____] and processes in place.

Network Architecture

Delta V is set up using a standard [_____] (LAN) configuration. In such a network, various devices are connected to a hub or switch. Each device occupies a position, or node, on the network. By connecting the devices to a network configuration, [_____] can be transmitted to and from each device.

In the case of Delta V, the network is comprised of workstations (operating terminals), as well as electronic input/output cards (I/O cards) that provide a network interface for

[   ] valves, motors, [   ] , and machines within the

manufacturing [   ] .

The Delta V network is closed, which means that connectivity to the network is

[   ] , and so access to the [   ] and devices on that

network is restricted to [   ] personnel.

Aufgabe Lückentext:

Folgende Wörter bitte in den Lückentext einfüllen.
Jedes Wort kommt einmal vor.
Bitte Gross- und Kleinbuchstaben beachten.

adapted, Automation, authorized, based, Biogen, biotechnology, control, computer, data, Delta V System, equipment, environment, flexibility, goods, highly, mechanization, industrial, industries, local area network, machines, pumps, restricted, regulatory, software, user, various, workstations