

Name: Chundola Damilola Olamide.

Department: Chemical Engineering.

Matric Number: 17 ENK601/022.

Course Code: CHE 312.

Course Title: Process Instrumentation.

(i) Briefly describe Chemical Process Diagrams.

Answer:

In chemical and other process engineering plants, the diagrams enable the operator or the process engineers to indicate and understand the general flow process, steps and the equipment used in the operation. This diagram shows the working relationship between major equipment in the plant facility.

Chemical process diagrams may be single or complex (multiple) depending on the structure and the operation of the plant. The flow diagrams may be represented in block diagrams or using chemical engineering equipments.

The chemical process diagrams includes:

(i) Major mechanical equipment.

(ii) Main piping

(iii) Direction of commodity.

(iv) Operating conditions e.g. Temperature ($^{\circ}\text{C}$), pressure (atm)

(v) Major controlling instrumentation.

(ii) Outline the purpose of P&ID and list its divisions.

Answer:

- It is used in basic start up to provide operational information for a working firm.
- It is used for safety and regulatory requirement.
- They are useful in training workers and contractor.
- It is used to understand chemical process and how the instrumentation are interconnected.

Division:

- The block plus Diagram (BFD).
- Process plus Diagram (PFD)
- Process and Instrumentation Diagram (PID).

Q) Give five common PID symbols with the instrument abbreviations used in instrument diagrams.

Answer:



Temperature alarm

TA



Plug valve

PV



Control valve

CV



Globe valve

GV



Mixer

M