PH Control System:-

objective:-

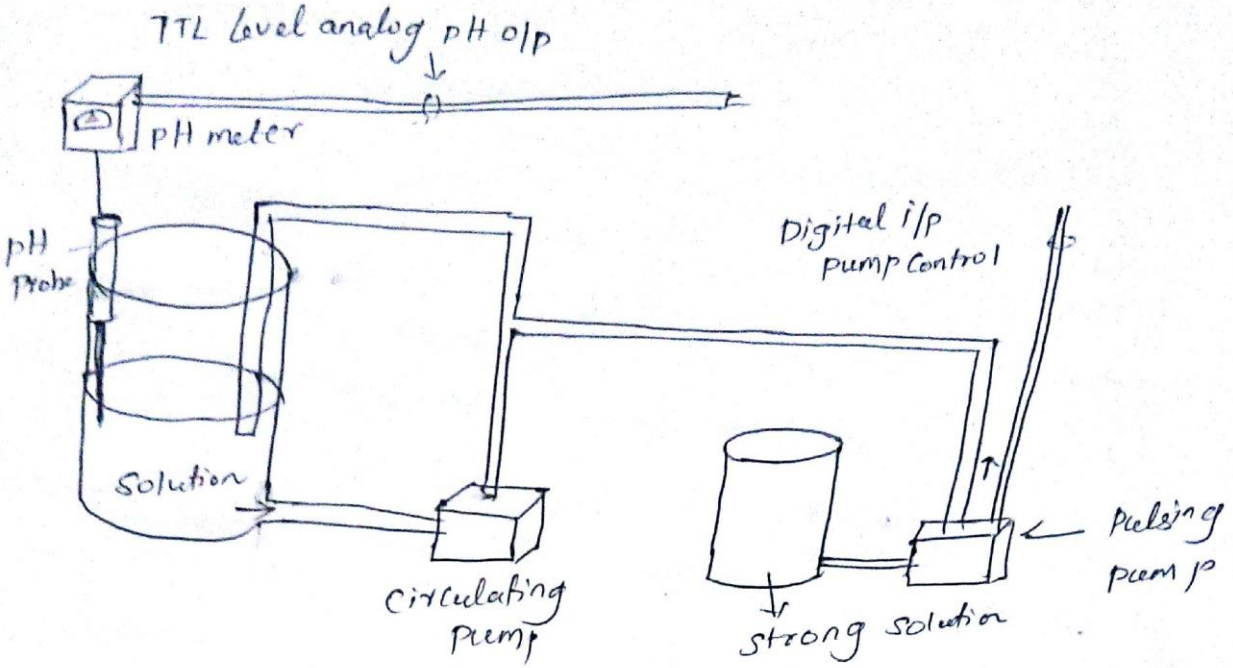
- is to model an industrial pH-neutralization system, which continuously monitors the pH level of a solution and makes adjustments as needed, so that to maintain the pH level at a specified point

- It requires one sensor & one actuator

* sensor - for measuring pH level
* Actuator - to control a metering which adds a neutralizing agent to the solution.

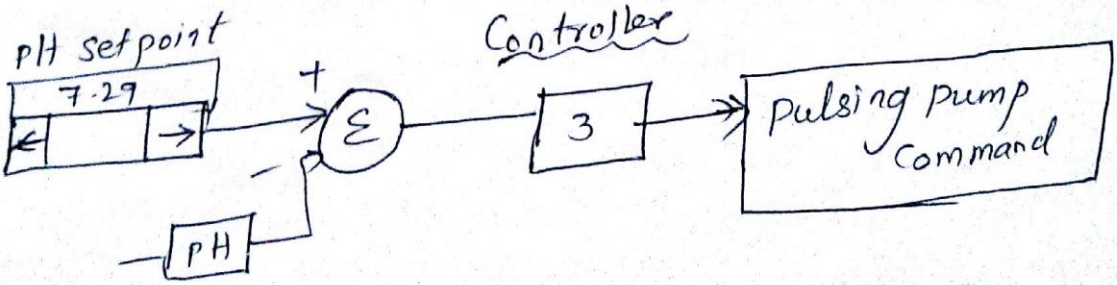
Parts:-

- Dc power supply
- plates, tubing and containers
- strong and weak pH solutions
- pH probe
- feed speed circulating pump
- mounting hardwares

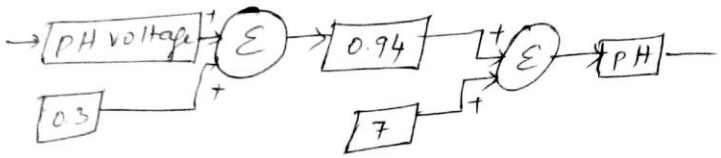


pH System

- The pH probe is partially submerged in the solution resevoir and communicates data to the pH meter, which displays the value on a digital readouts and also creates a TTL level o/p signal corresponding to the displayed value.
- The analog voltage signal will be connected to the GPIO card to measure the pH.
- The circulating pump remains ON for the duration of the experiment. Its function is to keep the solution resevoir mixed.
- Pulsing pump - ON/OFF Controlled by digital o/p.



Scaling



- pH system started with a solution pH of 7.3.
- at 20 sec into the test 20ml of pH 4.0 solution was poured into the solution reservoir to create disturbance.
- it quickly dropped the pH of the reservoir solution to 6.5.
- the strong solution of pH 10.0, is added after 20 min ⇒ the solution pH returns to its original values.