ABSTRACT

pH meter is a tool used to measure levels of acid-base balance of a solution. This tool is used in laboratories to measure the degree of acidity (pH) of a solution, whether the solution is quite acidic, alkaline or neutral. Use of this tool is very easy, with menyelupkan electrode in the sample solution. Electrode used was a glass electrode. Glass electrode consists of a piece of platinum wire covered with Ag and AgCl and immersed in HCl solution. The bottom electrode consists of a glass membrane that is united with a glass tube.

The workings of this tool is a pH electrode inserted into the sample solution, which then electrodes will detect the sample solution and converts the signal from the pH electrode into electrical signals and outputannya will be reinforced by the amplifier circuit in the form of analog voltage to be converted by the ICL 7106 in which the analog data will be converted into digital data so that results will be displayed on 3.5 digit LCD. By means of laboratory workers is expected to measure the value of a solution of pH on easily without the use of litmus paper. This tool uses a digital system using ICL 7106 as a data processor from voltage difference generated by the electrode and the results of the pH value will be displayed on 3.5 digit LCD.

Based on the measurement of pH buffer 2 shows the% error = ± 1.5%. At buffer pH 4 shows% error = ± 3.5%. At buffer pH 7 shows% error = ± 3.28%. At buffer pH 10 shows% error = ± 0.8%. While on the buffer pH 12 shows% error = ± 0.58%. So, by utilizing the ICL 7106 can be made various kinds of medical equipment. It is expected that this tool can assist the laboratory to measure the pH in a solution.

Key words: pH meters, electrodes, ICL 7106