Experiment 11:   **Write a Program to read PH value from various substances like Lime, water and Milk using PH sensor with Arduino Board**

Date : 16.10.2025

Aim:

To write a program to read PH value from various substances using a PH sensor with Arduino Board.

Components Required:

| S.No	Components Name	Range/Rating	Quantity
1	Universal Bread Board		1
2	Arduino Uno board		1
3	Ph sensor		1
4	Potentiometer (to simulate pH sensor output)		1
5	LCD Display Board		1
6	USB Cable		1
7	Jumper Wires		required

Hardware Setup:

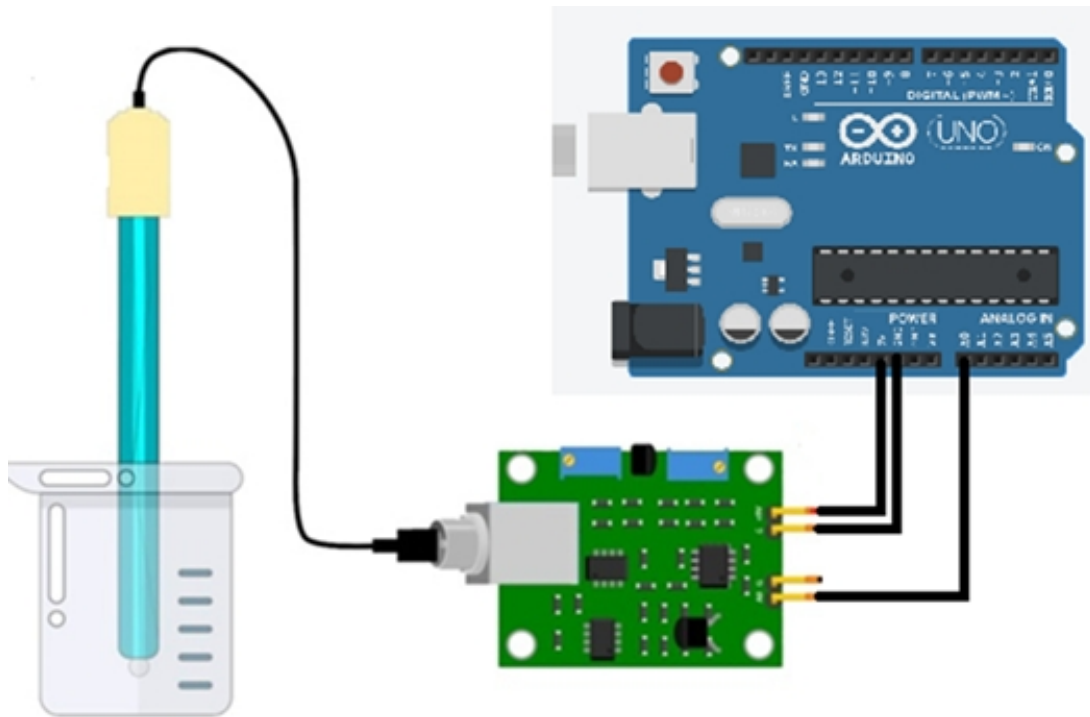**Connect LCD Display with Digital Pins**

Connect PH Senor pin with A0 and other pin with +5vcc and GND

Arrange the wires as in the following diagram

PH sensor 4502C
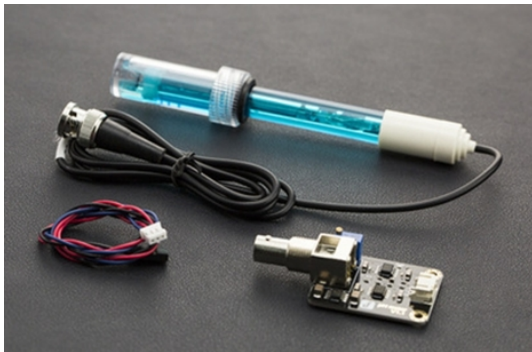
Connection Diagram: -

Program

```
const int potPin=A0;

float ph;

float Value=0;


void setup() {

  // put your setup code here, to run once:

  Serial.begin(115200);   // or Serial.begin(9600)

  pinMode(potPin,INPUT);

  delay(1000);

}

 void loop(){
```

```
  Value= analogRead(potPin);

  Serial.print(Value);

  Serial.print(" | ");

  float voltage=Value*(3.3/4095.0);

  ph=(3.3*voltage);

  Serial.println(ph);

  delay(500);

}
```

Simulate in Tinkercad

1. Components Needed:

   o Arduino Uno

   o Potentiometer (to simulate pH sensor output)

   o Wires and Breadboard

2. Setup:

   o Connect the middle pin of the potentiometer to A0 on the Arduino.

   o Connect one side pin of the potentiometer to 5V and the other to GND.

   o Upload the code to the Arduino in Tinkercad.

3. Simulation:

   o Adjust the potentiometer to simulate different pH levels.

   o Open the Serial Monitor to view the analog value, voltage, and simulated pH value.

OutPut
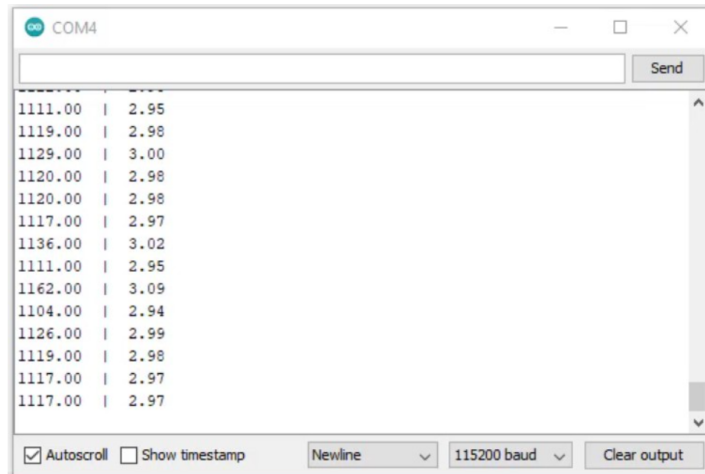
Working Observation:

> ➢ The Lime PH value is 2.8.
> ➢ The Milk Value is between 6.5 to 6.7
> ➢ Water PH Value is 7

RESULT: The PH value for the various substance is obtained by employing the PH sensor with Arduino microcontroller Board and Tested successfully.