

Determine the sensitivity of the liquid sensor:-

Aim:-

a) Conduct an experiment to determine the sensitivity of the liquid level sensor.

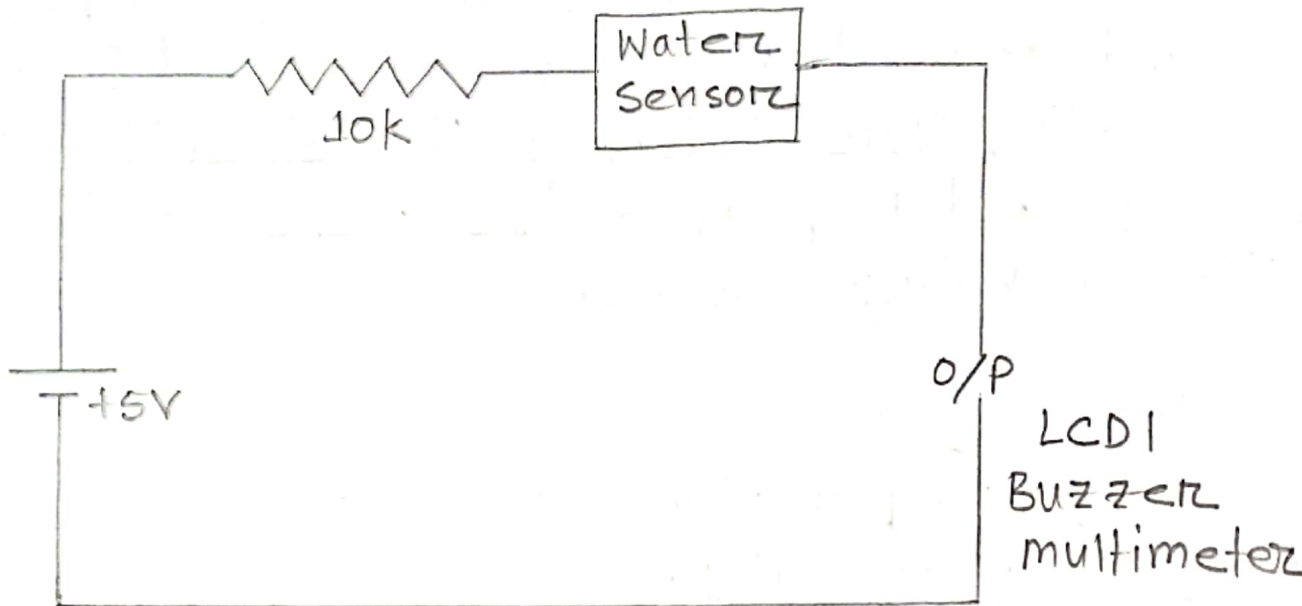
b) Design a system to indicate the petrol level in the vehicle using liquid level sensor.

Component Required:-

S. No.	Components	Quantity
01	Water level sensor	1
02	Bread Board	1
03	Buzzer	1
04	Led	1
05	Multimeter	1
06	Connecting wire	-

Working Principle:-

A liquid level control system by using a float sensor works on the principle of buoyancy, which states. A float immersed in a liquid is buoyed towards upward directions by an applied equal force to the weight of the displaced liquid. As a result, the body drives partially and gets submerged upon the liquid surface and converts the same distance the liquid level moves.



Observation Table

Depth (cm)	Voltage (V)	Strip	
0.5	2.8	Low	
1.0	3.2		
2.0	3.25		
3.0	3.55	Medium	
3.5	3.56		
4.0	3.60	High	

Result:

Sensitivity of the liquid sensor was determined and observed successfully.

Determine the sensitivity of the light sensor.

Aim:-

a) Conduct an experiment to determine the sensitivity of light sensor.

b) Analyse the application of light sensor using LDR.

Component Required:

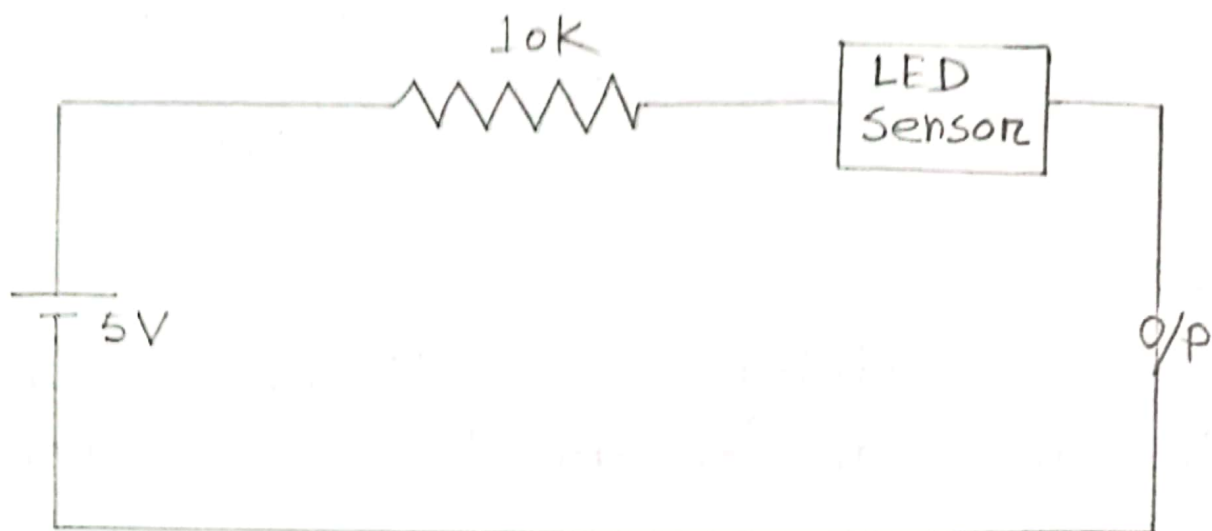
S. No.	Components	Quantity
01	LDR	01
02	Voltmeter	01
03	Connectivity	04
04	Buzzer	01
05	Bread Board	01
06	Multimeter	01

Observation:-

S. N.	Intensity of light	Output voltage	Status of buzzer
1	Low	0.96V	high buzzer
2	Medium	0.63V	medium buzzer
3	High	0.57V	low buzzer

Procedure:-

A light sensor is placed to the connection where output is connected to the buzzer +ve is connected to 5V and -ve is connected to ground. Here when light falls on sensor buzzer stops and when it is dark, it rings loudly.



Result:

Sensitivity of the light sensor was observed and determined successfully.

Aim:

- a) Conduct an experiment to determine the sensitivity of the ultrasonic sensor.
- b) Analyze the application of ultrasonic sensor using distance meter circuit.

4 pins :-
VCC - 5V
trigger - 6
Echo - 7
ground - GND

Components:-

- 1) Arduino
- 2) Ultrasonic sensor
- 3) LED
- 4) Connecting wires

Observation:-

SN	Centimeter	Inch	LED (ON/OFF)
1	39.4	15.5	OFF
2	6.2	2.44	ON

Result:

Sensitivity of the sensor was determined and output was verified.

Code:

```
#define pingTrig 6
#define pingTrig 7
#define ldrvalue 0

int led = 13;
void setup()
{
    serial.begin(9600);
    pinMode(pingTrig, OUTPUT);
    pinMode(pingEcho, INPUT);
    delay(200);
    pinMode(led, OUTPUT);
}
void loop()
{
    long duration, inches, cm, value;
    digitalWrite(pingTrig, LOW);
    delayMicroseconds(2);
    digitalWrite(pingTrig, HIGH);
    delayMicroseconds(10);
    digitalWrite(pingTrig, LOW);
    duration = pulseIn(pingEcho, HIGH);
    cm = duration / 29 / 2;
    inches = cm / 2.5;
    Serial.print("- ->"); Serial.println(cm);
    Serial.print("- ->"); Serial.println(inches);
    if (cm < 30)
    {
        digitalWrite(led, HIGH);
        delay(200);
        digitalWrite(led, LOW);
        delay(200);
    }
}
```