

Assignment 1

1. 3 A flows through a 240 V lamp. What is the resistance of the lamp?

According to Ohm's Law, $V = IR$

Therefore, Resistance of the lamp is given by R where:

$$R = V/I$$

$$R = 240 \text{ Volts} / 3 \text{ Amperes}$$

$$R = 80 \text{ Ohms.}$$

Resistance of the lamp is 80 Ohms.

2. How to check the resistance of a resistor using the colour coding ?

The colors have the following multiplier values:

Black 10^0 , Brown 10^1 , Red 10^2 , Orange 10^3 , Yellow 10^4 , Green 10^5 , Blue 10^6 , Violet 10^7 , Grey 10^8 , White 10^9 , Gold 10^{-1} , Silver 10^{-2} .

Note that these are only multiplier values. Significant values of each colour is the number to which 10 is raised to the power of. For resistors longer than 3 bands, we will also have a tolerance band.

Reading direction is determined by looking for the gap. The first three bands should be together and then we will see the gap and the tolerance band for the four band resistor.

3. Mention any 5 virtual environments which we can use for Arduino Simulation

Arduino can be simulated using the following virtual environments.

1. Tinkercad
2. Wokwi
3. Circuito
4. Autodesk EAGLE
5. Proteus VSM (paid)

4. What is sketch in Arduino?

Sketch is another name for the code we upload and run on the Arduino board. This includes both the setup and loop functions.

5. What are the three important parts of Arduino?

The three important parts of an Arduino are:

1. The microcontroller.
2. The USB connector and Power port for burning and power.
3. The female headers to connect actuators or sensors.