

# Experiment 1

## Introduction to the Circuits and Electronics Lab

### Pre-Lab Report

Question 1:

How do you plug and unplug the instruments in the LAB?

Plugging the instruments in the lab:

We plug the power lead in the instruments on the bench first, and then we plug it in the socket.

Unplugging the instruments in the lab:

We first start by detaching the power cable from the socket, then from the instrument.

Question 2:

Indicate the color coding of the resistors shown in the table below (Assume 10% Tolerance)

Resistor Value	Colour Code			
56K $\Omega$	Green	Blue	Orange	Silver
10 $\Omega$	Brown	Black	Black	Silver
33M $\Omega$	Orange	Orange	Blue	Silver

Question 3:

Indicate the values of the resistors shown in the table below

Resistor Value	Color Code
3.3E3 +/- 10%	
10E3 +/- 10%	
780E3 +/- 10%	

Question 4:

What are the two types of capacitors? What is the value of a ceramic capacitor with code 102?

There are two main types of capacitors. The ceramic capacitors, and the monolithic or chemical capacitors.

$$C = 10E-2 \text{ pF}$$

Question 5:

What is the base unit used for Inductors?

The base unit used for inductors is Henry (H) .

Question 6:

Name 3 types of diodes.

The three main types of diodes are : The rectifier diode, the zener diode, and the light-emitting diode.

Question 7:

Give a small definition of the integrated circuit.

An integrated circuit (IC) is a semiconductor wafer on which tens to hundreds of millions of tiny resistors, capacitors, and transistors are fabricated.

Question 8:

Name two technologies of relays.

A mechanical relay, is a switch that cannot operate at high switching frequencies due to mechanical limitations.

A Solid-state relay, is an electronic device that is easy to connect as a mechanical relay, but also can operate at relatively high frequencies.