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**PRELAB 1**

**Question 1:**

Ohm’s law states that the voltage across a conductor is directly proportional to the current flowing through it, provided all physical conditions and temperatures remain constant.

V = IR, where V is the voltage across the conductor, I is the current flowing through the conductor and R is the resistance provided by the conductor to the flow of current.

V(U) Voltage Unit: V

I Current Unit: A

R Resistance Unit: Ω

**Question 2:**

The main applications of Ohm’s law are:

• To determine the voltage, resistance or current of an electric circuit.

• Ohm’s law maintains the desired voltage drop across the electronic components.

• Ohm’s law is also used in DC ammeter and other DC shunts to divert the current.

**Question 3:**

R= R0\*(1+α(T-T0)

R= 5\*(1+4.5\*10-3\*(2500-200))

R= 56.75 Ω

**Question 4:**

Ohm’s law is not applicable for unilateral electrical elements like diodes and transistors as they allow the current to flow through in one direction only. For non-linear electrical elements with parameters like capacitance, resistance etc. The ratio of voltage and current won’t be constant with respect to time making it difficult to use Ohm’s law.