Technician Exam 2018-2021 - Questions on Ohm's Law and Power (T5C and T5D) – Chapter 3

T5C09 — How much power is being used in a circuit when the applied voltage is 13.8 volts and the current is 10 amperes?

Power equals Voltage multiplied by Current

$P = E \times I = 13.8\ V \times 10\ A = 138\ W$

T5C10 — How much power is being used in a circuit when the applied voltage is 12 volts DC and the current is 2.5 amperes?

Power equals Voltage multiplied by Current

$P = E \times I = 12\ V \times 2.5\ A = 30\ W$

T5C11 — How many amperes are flowing in a circuit when the applied voltage is 12 volts and the load is 120 watts?

Current equals Power divided by Voltage

$I = P / E = 240\ W / 12\ V = 20\ A$

(Practice only) What is the voltage in a circuit if a 50-watt load draws 5 amps?

Power equals Voltage multiplied by Current

$E = P / I = 50\ W / 5\ A = 10\ V$

T5D04 — What is the resistance of a circuit in which a current of 3 amperes flows through a resistor connected to 90 volts?

Resistance equals Voltage divided by Current

$R = E / I = 90\ V / 3\ A = 30\ \Omega$

T5D05 — What is the resistance in a circuit for which the applied voltage is 12 volts and the current flow is 1.5 amperes?

Resistance equals Voltage divided by Current

$R = E / I = 12\ V / 1.5\ A = 8\ W$

T5D06 — What is the resistance of a circuit that draws 4 amperes from a 12-volt source?

Resistance equals Voltage divided by Current

R = E / I = 12 V / 4 A = 3 W

T5D07 — What is the current in a circuit with an applied voltage of 120 volts and a resistance of 80 ohms?

Current equals Voltage divided by Resistance

I = E / R = 120 V / 80 Ω = 1.5 A

T5D08 — What is the current through a 100-ohm resistor connected across 200 volts?

Current equals Voltage divided by Resistance

I = E / R = 200 V / 100 Ω = 2 A

T5D09 — What is the current through a 24-ohm resistor connected across 240 volts?

Current equals Voltage divided by Resistance

I = E / R = 240 V / 24 Ω = 10 A

T5D10 — What is the voltage across a 2-ohm resistor if a current of 0.5 amperes flows through it?

Voltage equals Current multiplied by Resistance

E = I × R = 0.5 A × 2 Ω = 1 V

T5D11 — What is the voltage across a 10-ohm resistor if a current of 1 ampere flows through it?

Voltage equals Current multiplied by Resistance

E = I × R = 1 A × 10 Ω = 10 V

T5D12 — What is the voltage across a 10-ohm resistor if a current of 2 amperes flows through it?

Voltage equals Current multiplied by Resistance

E = I × R = 2 A × 10 Ω = 20 V