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State Finished

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Time taken 47 mins 6 secs

Grade 88.33 out of 100.00

Question 1

Correct

Mark 15.00 out of
15.00

Q1d

A 12 V battery supplies 650 mA (milli A) to a portable music system.

a) Determine the power delivered/absorbed by the music system

$$P_{\text{music_system}} = 7.8 \text{ W}$$

b) Determine how much energy the battery delivers/absorbs in 75 minutes?

$$\text{Energy } w = -35100 \text{ Joules}$$

“+” = absorbed “-” = delivered

Numeric Answer

a) $P_{\text{music_system}} = 7.80 \text{ W}$

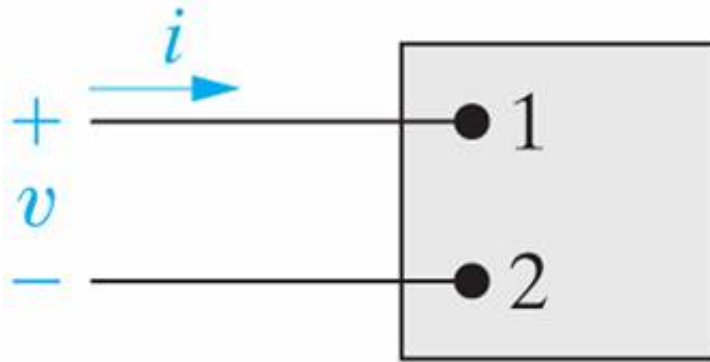
b) $\text{Energy } w = -35,100 \text{ J}$

Correct

Marks for this submission: 15.00/15.00.

Question 2

Correct

Mark 20.00 out of
20.00

Q2c

The voltage and current at the terminals of this circuit are zero for $t < 0$.For $t \geq 0$ $v = 40 e^{-1,700t}$ Volts $i = 6 e^{-1,700t}$ Ampsa) Find the power absorbed/delivered by the circuit element at $t = 500 \mu\text{s}$ (micro seconds).

$$P_{500\mu\text{s}} = 43.84 \text{ Watts}$$

b) How much energy is absorbed/delivered by the circuit element between zero and $500 \mu\text{s}$ (micro seconds)?

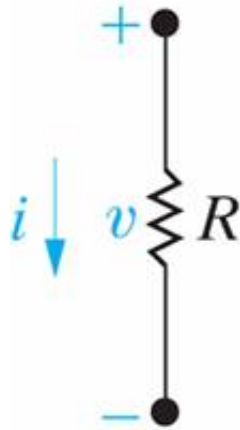
$$w = 57.69 \text{ mJ (milli Joule)}$$

Numeric Answera) $P_{500\mu\text{s}} = 43.8440 \text{ W.}$ b) $w = 57.6929 \text{ mJ}$ **Correct**

Marks for this submission: 20.00/20.00.

Question 3

Correct

Mark 10.00 out of
15.00

Q3f

Given:

A student measured the voltage and current for the resistor as shown in the figure.

$$v = -18.25 \text{ Volts} \quad i = 2.36 \text{ Amps}$$

The instructor verified that the voltage was measured correctly.

a) Was the current measured correctly?

Correct? = ✓

b) Find the power absorbed/delivered by the resistor. If needed, correct any measuring mistake (sign not magnitude). “+” = absorbed and “-” = delivered

$P_R =$ ✓ Watts

Numeric Answer

a) Correct? = No

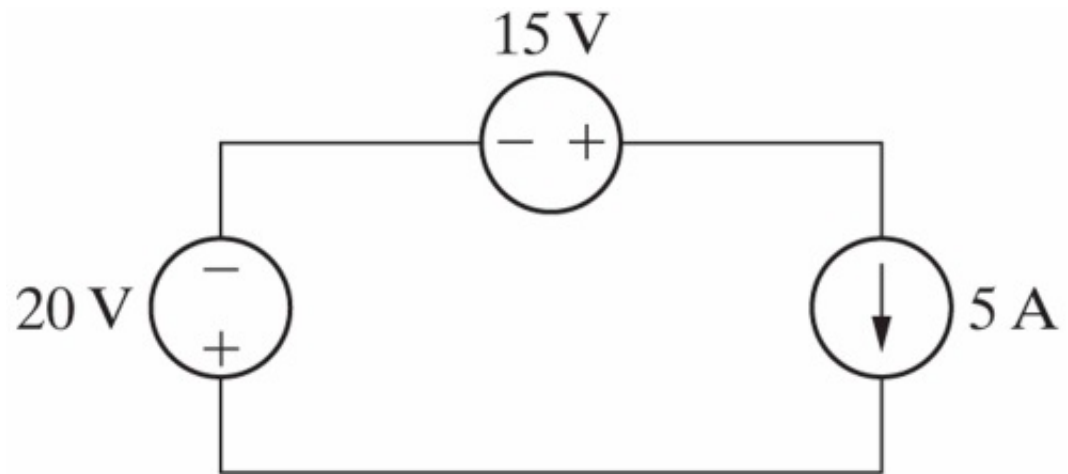
b) $P_R = 43.070$ Watts

Correct

Marks for this submission: 15.00/15.00. Accounting for previous tries, this gives
10.00/15.00.

Question 4

Correct

Mark 10.00 out of
10.00

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Q4

Calculate the power in each circuit element.

“+” = absorbed and “-” = delivered

$$P_{20V} = \boxed{100} \checkmark \text{ Watts}$$

$$P_{15V} = \boxed{-75} \checkmark \text{ Watts}$$

$$P_{5A} = \boxed{-25} \checkmark \text{ Watts}$$

Numeric Answer

$$P_{20V} = +100W$$

$$P_{15V} = -75W$$

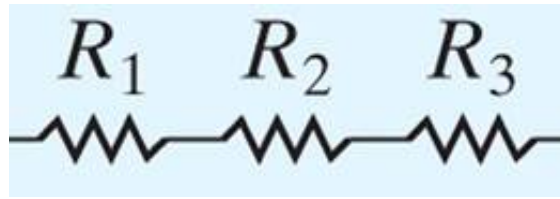
$$P_{5A} = -25W$$

Correct

Marks for this submission: 10.00/10.00.

Question 5

Correct

Mark 10.00 out of
10.00

Q5

Given:

$$R_1 = 147 \, \Omega \text{ (Ohm)} \quad R_2 = 187 \, \Omega \text{ (Ohm)} \quad R_3 = 8833 \, \Omega \text{ (Ohm)}$$

Find the equivalent resistance R_{Eq} .

$$R_{\text{Eq}} = ??? \, \Omega \text{ (Ohm)}$$

Answer: 9167



The equivalent resistance is the sum of the individual series resistances.

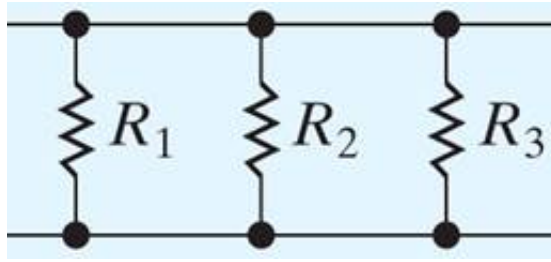
The correct answer is: 9167.00

Correct

Marks for this submission: 10.00/10.00.

Question 6

Correct

Mark 10.00 out of
10.00

Q6

Given:

$$R_1 = 199 \, \Omega \text{ (Ohm)} \quad R_2 = 310 \, \Omega \text{ (Ohm)} \quad R_3 = 5704 \, \Omega \text{ (Ohm)}$$

Find the equivalent resistance R_{Eq} .

$$R_{\text{Eq}} = ?? \, \Omega \text{ (Ohm)}$$

Answer: 118.677



Calculated question.

Use the parallel resistor rules to find the equivalent resistance.

The correct answer is: 118.68

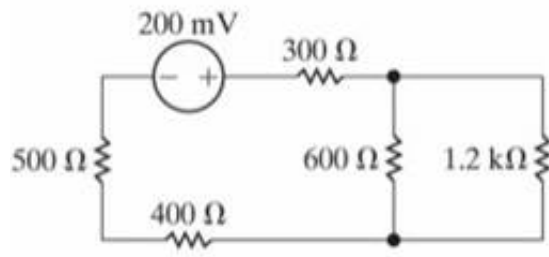
Correct

Marks for this submission: 10.00/10.00.

Question 7

Correct

Mark 13.33 out of 20.00



Q7a

Find the voltage across the 1.2 kΩ (kilo Ohm) resistor.

$$V_{1.2\text{k}\Omega} = 50 \text{ mV (milli Volts)}$$

Numeric Answer

$$V_{1.2\text{k}\Omega} = 50 \text{ mV}$$

Correct

Marks for this submission: 20.00/20.00. Accounting for previous tries, this gives **13.33/20.00**.