3

The breadboard is used to connect the elements with a need of Soldering of elements. * (2 Points)

- [x] False
- [ ] True

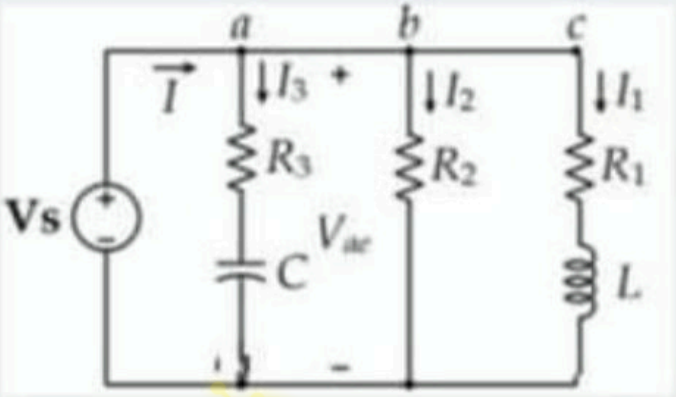
4

The cost of the resistor depends on *
(2 Points)

- A. Ohmic value.
- Both A and C
- None of these.
- C. Power ratings.
- B. Break down voltage.

5

According to the figure shown below, which statements is true: *
(2 Points)



Assume Vs is DC power supply

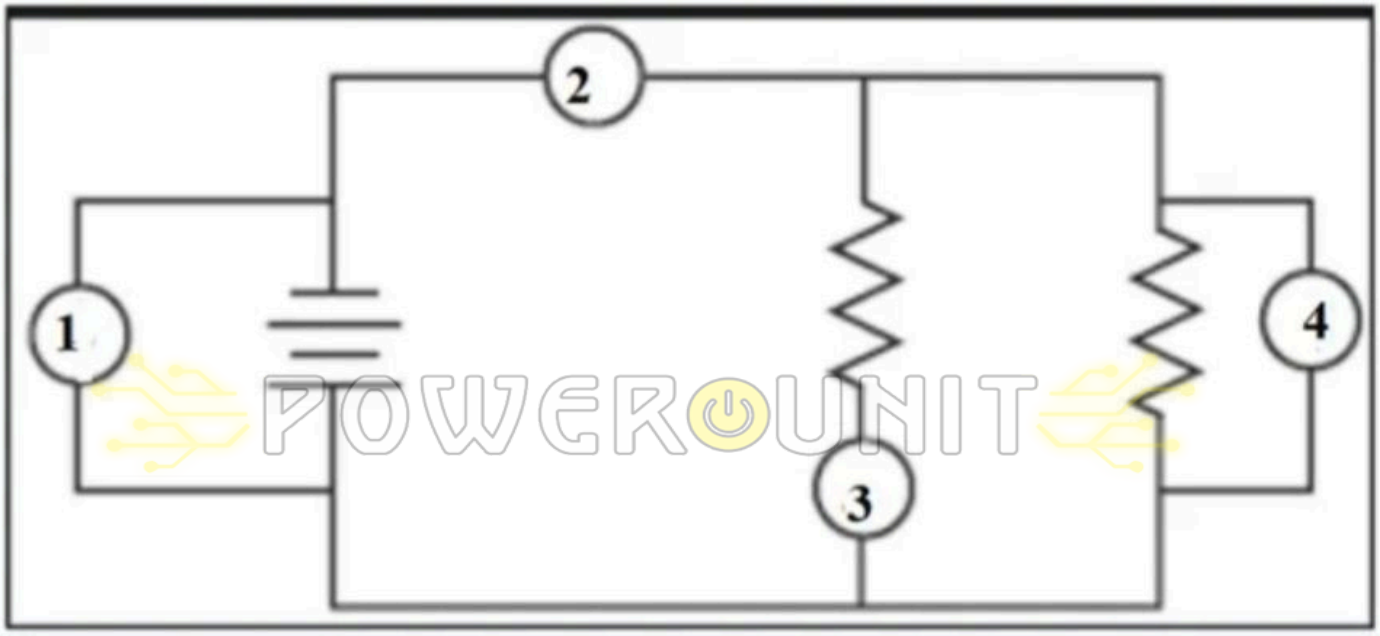
R3=2R1=4R2

- D. I1 is one fourth of I2
- B. The current I1 is double of I2
- A. The current I1 is half I2
- Both B and C are correct
- Both A and C are correct
- C. I3 = 0

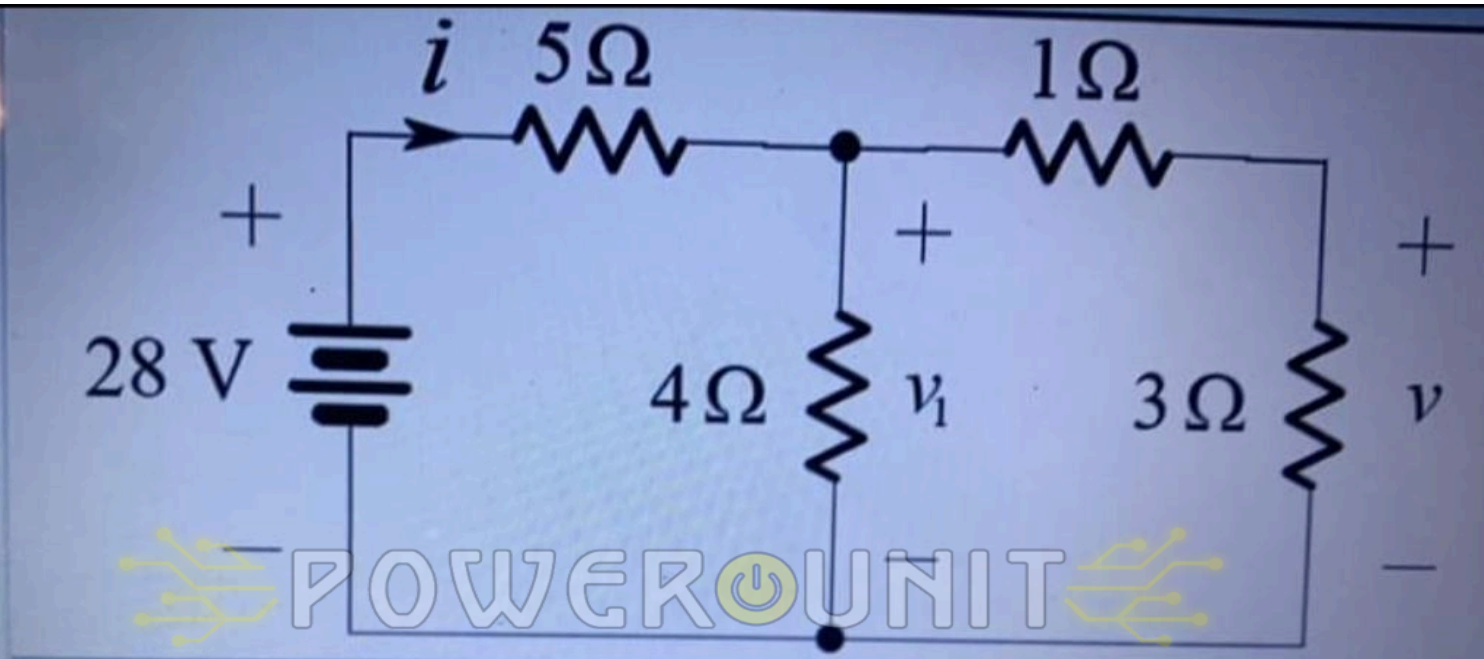
C

6

You are asked to connect the following circuit in the lab, to connect it correctly: *
(2 Points)



- B. Device 2 and4 are ammeters., 1 and 3 are voltmeters
- None of these.
- B. Device 2 and 3 are ammeters., 1 and 4 are voltmeters
- B. Device 1 and4 are ammeters., 2 and 3 are voltmeters
- Both A and C are correct



- None of these
- A. The voltage across 4 ohm is higher than the voltage of 5 ohm across R1
- B. The current through 4 ohm is higher than the current through 3 ohm
- Both A and C
- C. The current through 4 ohm is equal to the current through 3 ohm

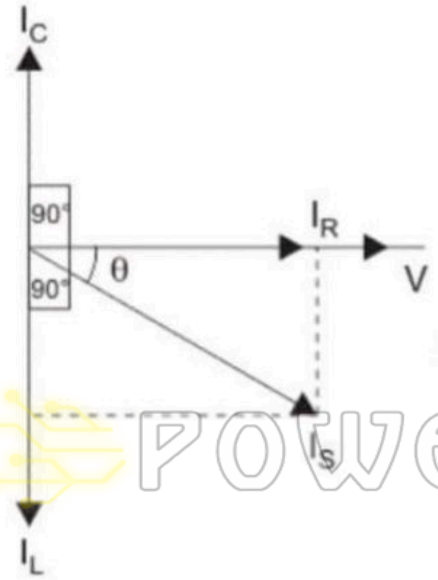
image, if you want to generate a square wave with 300 Hz, which bottoms you have to press *
(2 Points)

- C with 4
- B with 4
- C, with 2
- A, with 1
- **A with 4**

9

For RLC parallel circuit with phasor diagram as shown in the figure, which of the following statements is correct?
*

(2 Points)



A. $I_s = (I_c - I_L) + I_R$

B. $I_s = (I_L - I_c) + I_R$

C. $I_s = (I_R - I_L) + I_c$

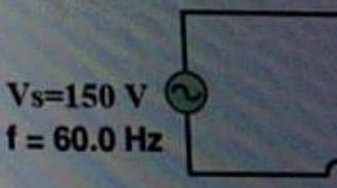
D. $I_s = (I_c - I_R) + I_L$

E. A and B are correct

- (●) B
- ( ) A
- ( ) E
- ( ) C
- ( ) D

(2 Points)

A series RLC circuit has R = 100 Ω, L = 1.25 H, C = 3.50 μF.
It is connected to an AC source

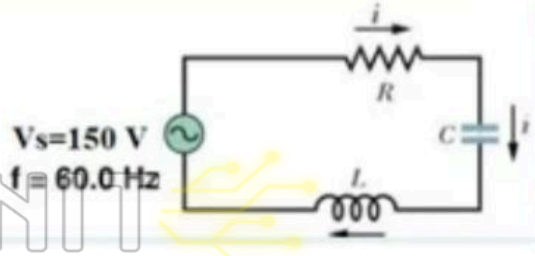


- None of above
- 1529.92
- 303.92
- 1229
- 100

11

For the series RLC circuit shown, what is the magnitude value of the current * (2 Points)

A series RLC circuit has R = 100 Ω, L = 1.25 H, C = 3.50 μF.
It is connected to an AC source

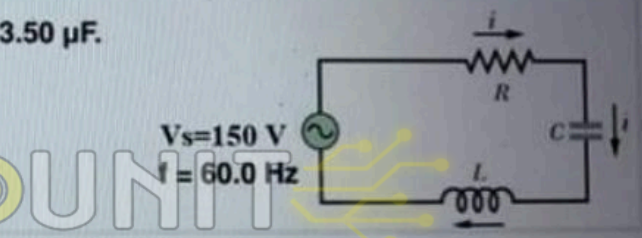


- [x] None of above
- [ ] 0.49 A
- [ ] 4.9 A
- [ ] 0.15 A
- [ ] 1.5 A

12

For the series RLC circuit shown, what is the phase angle between the current and the voltage in (degree) *
(2 Points)

A series RLC circuit has R = 100 Ω, L = 1.25 H, C = 3.50 μF.
It is connected to an AC source



- ○ 8.72
- ○ 7.08
- ◉ -70.8
- ○ -8.72
- ○ None of above

13

For series R-L-C circuit at resonant frequency: *
(2 Points)

- C and D are correct
- A. The impedance Z is totally real
- B. I is minmum and the voltage is maximum
- C. Z is imaginary, the power factor iequal one
- **A and D are correct**
- D. I is maximum, and the Power is maximum

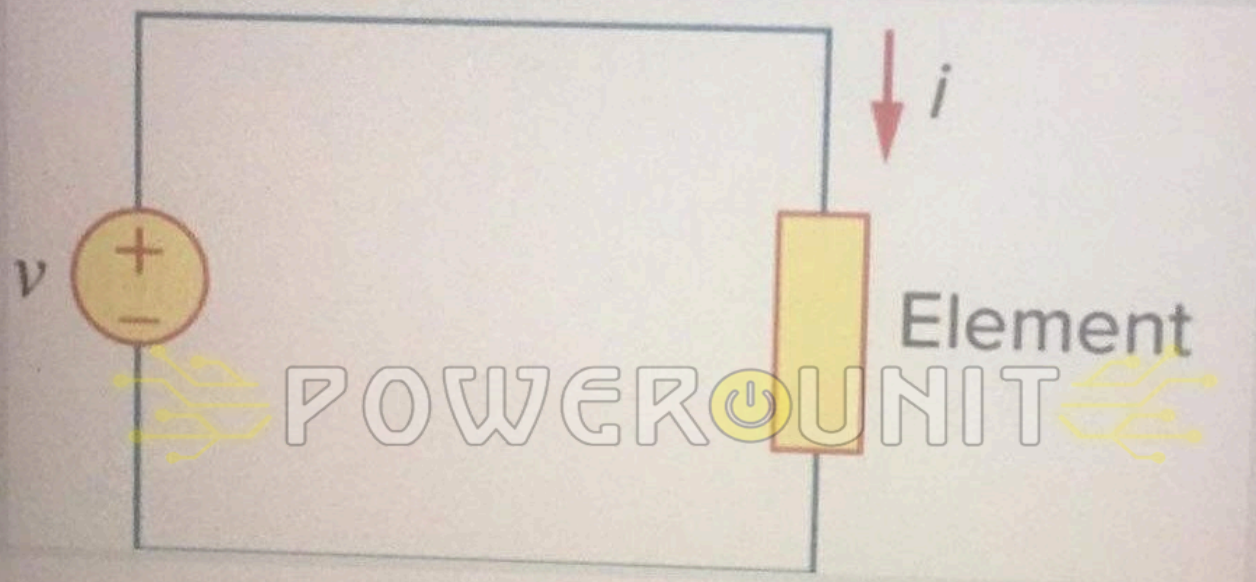
14

For parallel R-L circuit: *
(2 Points)

- As the frequency increases, XL decreases
- V lag I
- As the frequency increases, the current decreases
- As the frequency increases, R decreases
- None of these

15

In the Figure shown, if i = cos 100t and v = sin 100t, the element is: *
(2 Points)



- a diode
- a capacitor
- an inductor
- a resistor
- None of these

16

A 10-H inductor changes its current by 3A in 0.2 s. The voltage produced at the terminals of the inductor is: *
(2 Points)

- 3 V
- 1.2 V
- 150 V
- None of these
- 74 V
- 8.888 V

17

In the case of a parallel R-C circuit, the source current _____ the source voltage. *

17

In the case of a parallel R-C circuit, the source current ..... the source voltage. * (2 Points)

- None of these
- Lags
- Leads
- Remains in phase with

19

As frequency increases, what of the following statements is true? * (2 Points)

- ○ both series and parallel RC impedance decrease
- ○ None of these
- ○ series RC impedance decreases and parallel RC impedance increases
- ○ series RC impedance increases and parallel RC impedance decreases
- ◉ both series and parallel RC impedance increase

20

The voltage v(t) expression is: *
(2 Points)

- $2\cos\left(\frac{\pi}{8}\right)V$
- $2\sin\left(\frac{\pi}{2t}\right)V$
- $\cos(500\pi t)\ V$
- $\cos\left(\pi t - \frac{\pi}{4}\right)\ V$
- $2\cos\left(500\pi t - \frac{\pi}{4}\right)\ V$

21

The impedance Z *
(2 Points)

- $0.04 - j0.72\ \Omega$
- $0.353 + j0.353\ \Omega$
- $0.353 - j0.64\ \Omega$
- $0.353 + j0.64\ \Omega$
- None of these
- $41.45\ \Omega$
- $1.41 + j1.41\ \Omega$
- $1.41 - j1.41\ \Omega$