Completed on	Thursday, 25 February 2021, 1:46 PM
Time taken	30 mins 52 secs
Marks	37.00/40.00
Grade	**18.50** out of 20.00 (**93**%)

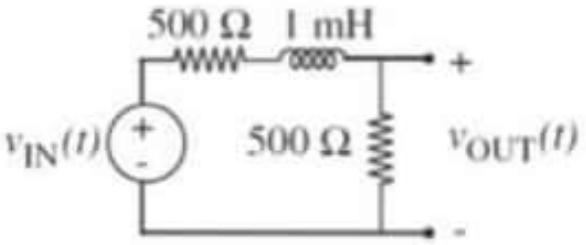
Question 1

Correct Mark 1.00 out of 1.00

1

Flag question

Determine the time constant of the circuit shown below:



Select one:

a. $1\ ms$

b. $2\ ns$

c. $1\ \mu s$ ✓

d. 2 s

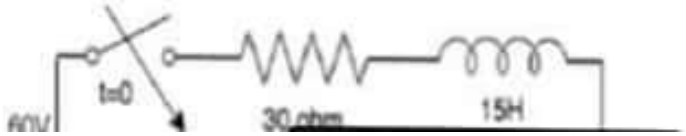
The correct answer is: $1\ \mu s$

Question 2

Correct Mark 1.00 out of 1.00

Flag question

If the switch in the above circuit is closed at t=0, what is the voltage across the inductor at a very long time after the switch is closed?



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Question 11 Correct Mark 1.00 out of 1.00

2

Flag question

The current in a coil produces _____ in an inductor.

Select one:

- a. Magnetic flux ✓
- b. Magnetic density
- c. Magnetic field
- d. Electric field

The correct answer is: Magnetic flux

Question 12 Correct Mark 1.00 out of 1.00

3

Flag question

The unit of the capacitance of a capacitor is _____

Select one:

- a. Coulombs/Volt ✓
- b. Charge/Ampere
- c. Coulombs/Ampere
- d. Charge/Volt

The correct answer is: Coulombs/Volt

Question 13 Correct Mark 1.00 out of 1.00

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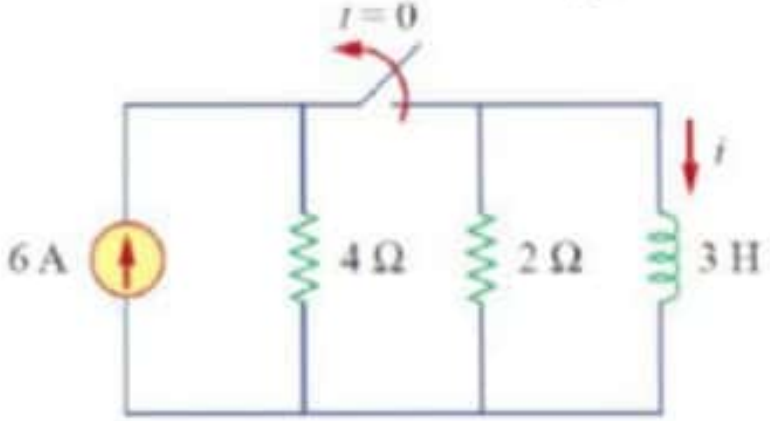
Question 3 Correct Mark 1.00 out of 1.00

4

Flag question

Determine the expression for $i(t)$ in A for t > 0



Select one:

a. $i(t) = 6e^{-\frac{1}{3}t}$

b. $i(t) = 6e^{-\frac{1}{4}t}$

c. $i(t) = 6e^{-\frac{1}{2}t}$

d. $i(t) = 6e^{-\frac{2}{3}t}$ ✓

The correct answer is: $i(t) = 6e^{-\frac{2}{3}t}$

Question 4 Correct Mark 1.00 out of 1.00

Flag question

Which of the following Op Amp feedback model enhances the non-linearity of the circuit?

Select one:

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The correct answer is: $i(t) = 6e^{-\frac{3}{5}t}$

Question 4 Correct Mark 1.00 out of 1.00

Flag question

5

Which of the following Op Amp feedback model enhances the non-linearity of the circuit?

Select one:

- a. Positive feedback ✓
- b. Negative feedback
- c. Closed-loop feedback
- d. Amplifier feed-forward

The correct answer is: Positive feedback

Question 5 Correct Mark 1.00 out of 1.00

Flag question

6

At DC, capacitor acts as _____

Select one:

- a. Open circuit ✓
- b. Short circuit
- c. Resistor
- d. Inductor

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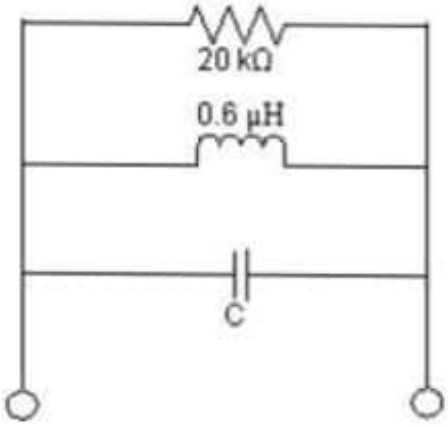
Question 7

Correct Mark 1.00 out of 1.00

Flag question

7

Determine the value of C to produce a critically damped response in the parallel RLC circuit shown below



Select one:

a. 0.525 fF

b. 0.645 fF

c. 0.375 fF ✓

d. 0.725 fF

The correct answer is: 0.375 fF

Question 8

Correct Mark 1.00 out of 1.00

Flag question

8

_____ stores energy in the magnetic field.

Select one:

a. Capacitor

b. Inductor ✓

c. Resisto[redacted]

Scanned with CamScanner

d. Inductor

The correct answer is: Open circuit

Question 6

Correct Mark 1.00 out of 1.00

Flag question

9

A circuit that consists of at least one inductor and one capacitor can exhibit oscillations corresponding to the exchange of _____ between the inductor and capacitor.

Select one:

a. Energy ✓

b. Power

c. Voltage

d. Current

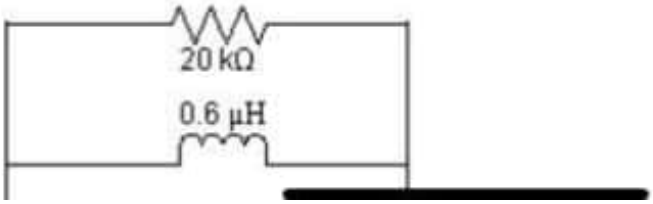
The correct answer is: Energy

Question 7

Correct Mark 1.00 out of 1.00

Flag question

Determine the value of C to produce a critically damped response in the parallel RLC circuit shown below



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Question 13 Correct Mark 1.00 out of 1.00

Flag question

10

When the time constant associated with passive elements is multiplied by the gain of an Op Amp, the resulting effect is usually called the _____

Select one:

- a. Miller effect ✓
- b. Kraft-Millan effect
- c. Op Amp effect
- d. Positive feedback effect

The correct answer is: Miller effect

Question 14 Correct Mark 1.00 out of 1.00

Flag question

11

Second-order circuits contain _____ energy storage elements with _____ states.

Select one:

- a. More; Interdependent
- b. Two; Independent ✓
- c. One; Dependent
- d. Three; Dependent

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Question 9 Correct Mark 1.00 out of 1.00

Flag question

12

An LC circuit is _____ because it contains no energy dissipating element.

Select one:

- a. Lossless ✓
- b. Lossy
- c. Loosed
- d. Lumped

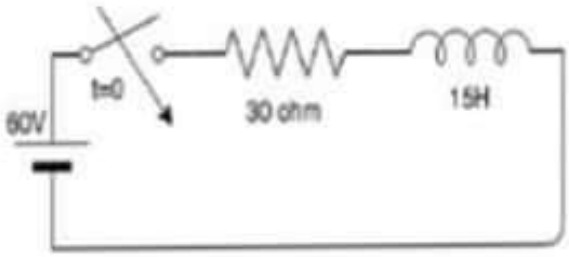
The correct answer is: Lossless

Question 10 Correct Mark 1.00 out of 1.00

Flag question

13

If the switch in the below circuit is closed at t=0, what is the current in the circuit immediately the switch is closed?



Select one:

- a. 0 A ✓
- b. 30 A
- c. 10 A

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The correct answer is: $1\ \mu s$

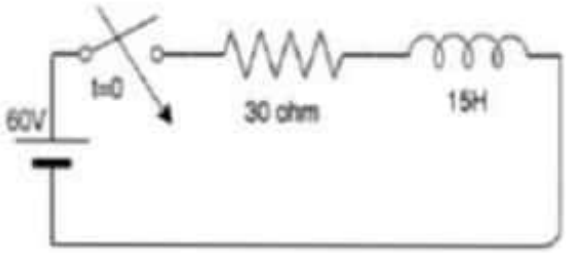
Question 2

Correct Mark 1.00 out of 1.00

14

Flag question

If the switch in the above circuit is closed at t=0, what is the voltage across the inductor at a very long time after the switch is closed?



Select one:

- a. $0\ V$ ✓
- b. $20\ V$
- c. $30\ V$
- d. $60\ V$

The correct answer is: $0\ V$

Question 3

Correct Mark 1.00 out of 1.00

Flag question

Determine the expression for $i(t)$ in A for t > 0

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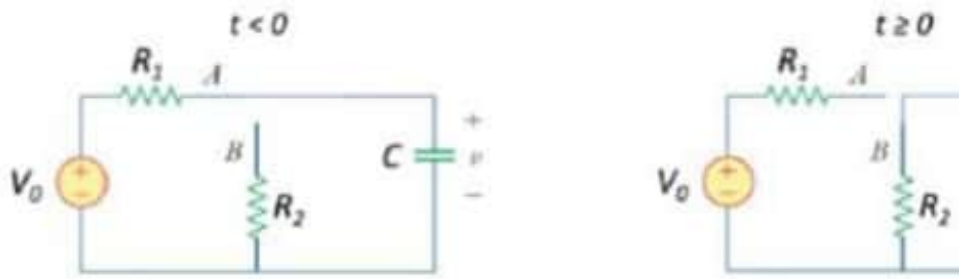
15

The switch in the circuit below has been in position A for a long time. Assume the switch moves instantaneously from A to B at t=0, what is the expression for v for $t > 0$?



Select one:

a. $v(t) = V_o e^{-\frac{t}{R_1 C}}$

b. $v(t) = V_o \left(1 - e^{-\frac{t}{R_2 C}}\right)$

c. $v(t) = V_o \left(1 - e^{-\frac{t}{R_1 C}}\right)$

d. $v(t) = V_o e^{-\frac{t}{R_2 C}}$ ✓

The correct answer is: $v(t) = V_o e^{-\frac{t}{R_2 C}}$

Question 19

Correct Mark 1.00 out of 1.00

16

Flag question

The integral of an impulse response generates a _____

Select one:

a. Unit impulse function

b. Unit step function ✓

c. Linear function

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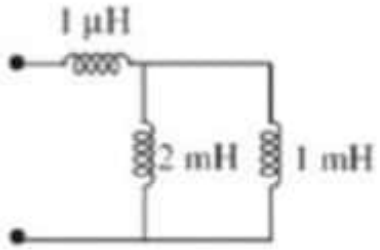
Flag question

17

Determine the approximate net inductance of the network shown below:



Select one:

a. 1000 μH

b. 667 μH ✓

c. 300 mH

d. 1000 mH

The correct answer is: 667 μH

Question 16

Correct Mark 1.00 out of 1.00

18

Flag question

In evaluating a circuit response, the homogeneous solution is the same as the _____ of the circuit.

Select one:

a. Non-homogeneous response

b. Natural response ✓

c. Quasi response

d. Forced response

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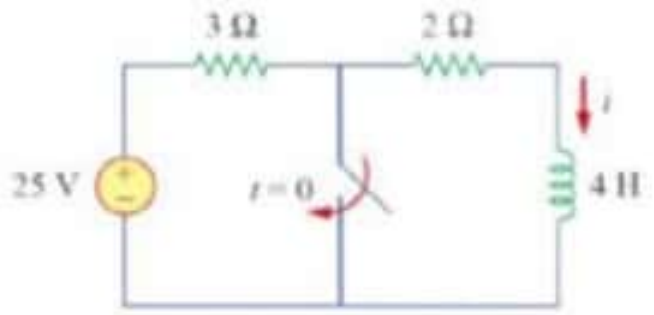
Determine the expression for $i(t)$ in A for t > 0

19



Select one:

a. $i(t) = 5(1 - e^{-0.5t})$

b. $i(t) = 5e^{-0.5t}$ ✓

c. $i(t) = 1 - e^{-0.5t}$

d. $i(t) = e^{-0.5t}$

The correct answer is: $i(t) = 5e^{-0.5t}$

Question 21

Correct Mark 1.00 out of 1.00

Flag question

20

Given an R-C circuit, the time constant is defined as

_____

Select one:

a. RL

b. RC ✓

c. R/C

d. C/R

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The correct answer is: Natural response

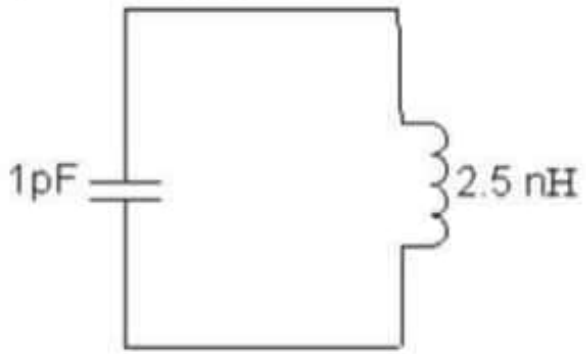
Question 17

Correct Mark 1.00 out of 1.00

21

Flag question

The frequency of oscillation of the response and the characteristics impedance of the LC circuit shown below are _____and_____



Select one:

a. 2.45 GHz and 50 Ω

b. 3.18 GHz and 50 Ω ✓

c. 2.25 GHz and 50 Ω

d. 3.45 GHz and 50 Ω

The correct answer is: 3.18 GHz and 50 Ω

Question 18

Correct Mark 1.00 out of 1.00

Flag question

The switch in the circuit below has been in position A for a long time. Assume the switch moves instantaneously from A to B at t=0 [redacted] for [illegible]

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Question 32 Correct Mark 1.00 out of 1.00

Flag question

22

Identify a common loss mechanism in a capacitor.

Select one:

a. Capacitance
b. Dielectric leakage ✓
c. Inductance
d. Resistance

The correct answer is: Dielectric leakage

Question 33 Correct Mark 1.00 out of 1.00

Flag question

23

Identify a common loss mechanism in an inductor.

Select one:

a. Resistive loss in the winding ✓
b. Capacitive loss in the coil
c. Inductivity in the wire
d. Dielectric gain in the coil

The correct answer is: Resistive loss in the winding

Scanned with CamScanner

a. Resistive loss in the winding

b. Capacitive loss in the coil

c. Inductivity in the wire

d. Dielectric gain in the coil

The correct answer is: Resistive loss in the winding

Question 34 Correct Mark 1.00 out of 1.00

24

Flag question

Given an RL circuit, the time constant is derived as

_____

Select one:

a. L/R

b. R/L

c. LR

d. LC

The correct answer is: L/R

Question 35 Correct Mark 1.00 out of 1.00

Flag question

Scanned with CamScanner

Question 22 Correct Mark 1.00 out of 1.00

Flag question

25

Identify the circuit element(s) combination whose circuit response does not exhibit temporal behaviour.

Select one:

- a. Resistor ✓
- b. Capacitor
- c. Inductor
- d. R-L Circuit

The correct answer is: Resistor

Question 23 Correct Mark 1.00 out of 1.00

Flag question

26

A forced response is so called because it depends on _____

Select one:

- a. External inputs ✓
- b. Inputs and outputs
- c. Internal inputs
- d. Circuit elements

The correct answer is: External inputs

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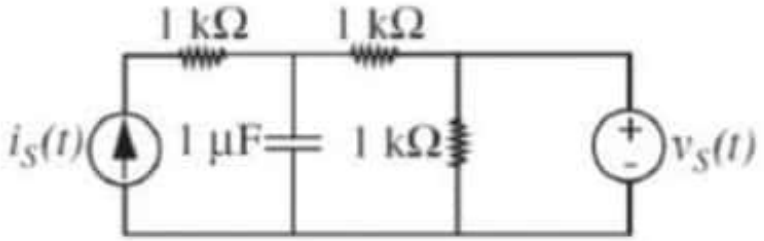
Question 26 Incorrect Mark 0.00 out of 1.00

Flag question

What is the time constant of the circuit shown below?

27



Select one:

a. **0.001 s**

b. **0.003 s** ✗

c. **0.002 s**

d. 0.0067 s

The correct answer is: **0.001 s**

Question 27

Correct Mark 1.00 out of 1.00

Flag question

The response of a second-order circuit can be classified as: I. Under-damped; II. Critically-damped; III. Over-damped; IV. Highly-damped; V. Very-damped.

28

Select one:

a. I,IV,III

b. I,II,III ✓

c. I,V,II

d. II,IV,V

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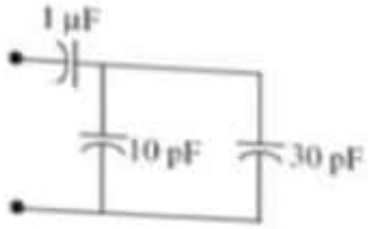
Question 30

Incorrect Mark 0.00 out of 1.00

Flag question

29

Determine the approximate net capacitance of the network shown below:



Select one:

- a. 40 μF ✗
- b. 41 pF
- c. 40 pF
- d. 1 μF

The correct answer is: 40 pF

Question 31

Correct Mark 1.00 out of 1.00

Flag question

30

The RC _____ utilizes _____ to saturate the Op Amp at both positive and negative values of the power supply voltage.

Select one:

- a. Circuit; Energy storage
- b. Oscillator; Positive feedback ✓
- c. Amplifier; Amplification
- d. Filter; Capacitors

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Question 24

Correct

Mark 1.00 out of 1.00

Flag question

31

_____ stores energy in the electric field.

Select one:

- a. Capacitor ✓
- b. Inductor
- c. Resistor
- d. Ballast

The correct answer is: Capacitor

Question 25

Correct

Mark 1.00 out of 1.00

Flag question

32

The energy in the transient decays to an approximate value of _____ in about _____ cycles.

Select one:

- a. 2%; Q ✓
- b. 0.2%; L
- c. 0.22%; C
- d. 2.2%; R

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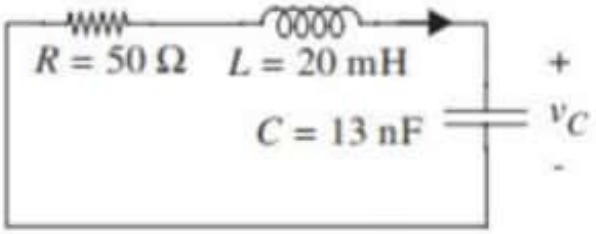
Question 37

Correct Mark 1.00 out of 1.00

Flag question

What is the general shape of the waveform the circuit below produces

33



Select one:

- a. Decaying sinusoid ✓
- b. Exponential decay
- c. Oscillation
- d. Exponential growth

The correct answer is: Decaying sinusoid

Question 38

Correct Mark 1.00 out of 1.00

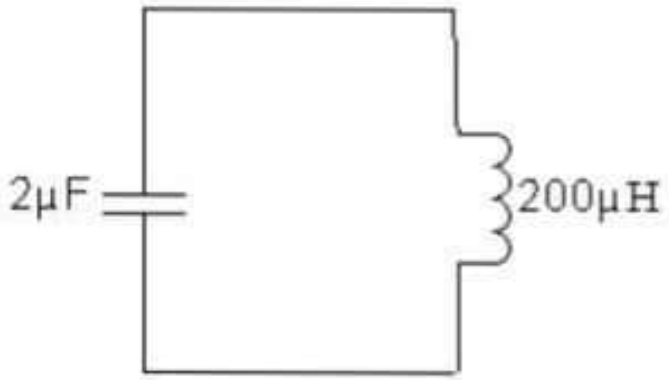
Flag question

Suppose that in an electret microphone, sound waves produces a sinusoidal time varying capacitance given by $C = A + B \sin 2\pi f t$, where A and B are constants, f is the frequency and t is the time, determine the expression for current $i(t)$ generated by the capacitive sensor if a constant voltage source V is connected across the capacitance as shown below:

Scanned with CamScanner

In the circuit shown below, suppose at some time t=to, the current flowing through the inductor was 1A while at the same time the voltage measured across the capacitor was 4 V, then the peak voltage across the capacitor and the peak current flow in the inductor will be_____ and _____.

34



Select one:

- a. **31.6 V** and 3.16A
- b. **10.77V** and 1.077A ✓
- c. **14.142V** and 1.4142A
- d. **22.36V** and 2.236A

The correct answer is: **10.77V** and 1.077A

Question 36

Correct Mark 1.00 out of 1.00

Flag question

35

The impulse response is non-zero for time ***t*** equal to _____

Select one:

- a. Zero ✓
- b. Positive value
- c. Negative value

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Question 28

Incorrect Mark 0.00 out of 1.00

Flag question

36

A circuit with two or more storage elements that can be replaced by a single equivalent storage element is called a _____

Select one:

a. First-order circuit

b. Second-order circuit ✗

c. More-order circuit

d. Two- or More-order circuit

The correct answer is: First-order circuit

Question 29

Correct Mark 1.00 out of 1.00

Flag question

37

Which of the following combination of circuit elements can be utilised for the design of filters, samplers, energy processing circuits and memories?

Select one:

a. Ballast and Resistors

b. Inductors and Capacitors ✓

c. Voltage divider and rheostat

d. Variable resistor and Battery

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Question 39

Correct Mark 1.00 out of 1.00

38

Flag question

_____ is the response to the initial stored energy considering an undriven system.

Select one:

- a. Zero-state response (ZSR)
- b. Zero-input response (ZIR) ✓
- c. Zero-variable response (ZVR)
- d. Zero-output response (ZOR)

The correct answer is: Zero-input response (ZIR)

Question 40

Correct Mark 1.00 out of 1.00

39

Flag question

_____ is the response to an applied driven signal, given that there is no initial stored energy.

Select one:

- a. Zero-state response (ZSR) ✓
- b. Zero-input response (ZIR)
- c. Zero-variable response (ZVR)
- d. Zero-output response (ZOR)

The correct answer is: Zero-state response (ZSR)

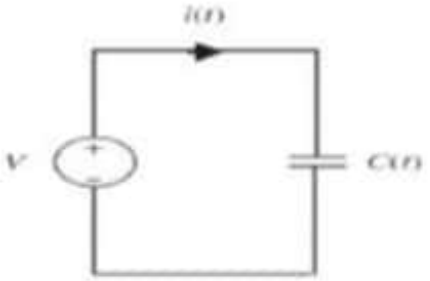
Scanned with CamScanner

Question 38

Correct Mark 1.00 out of 1.00

Flag question

Suppose that in an electret microphone, sound waves produces a sinusoidal time varying capacitance given by $C = A + B\sin 2\pi ft$, where A and B are constants, f is the frequency and t is the time, determine the expression for current $i(t)$ generated by the capacitive sensor if a constant voltage source V is connected across the capacitance as shown below:



40

Select one:

a. $i(t) = A + VB2\pi f\cos 2\pi ft$

b. $i(t) = A + VB2\pi f\sin 2\pi ft$

c. $i(t) = VB2\pi f\cos 2\pi ft$ ✓

d. $i(t) = VB2\pi f\sin 2\pi ft$

The correct answer is: $i(t) = VB2\pi f\cos 2\pi ft$

Question 39

Correct Mark 1.00 out of 1.00

Flag question

_____ is the response to the initial stored energy considering an undriven system.

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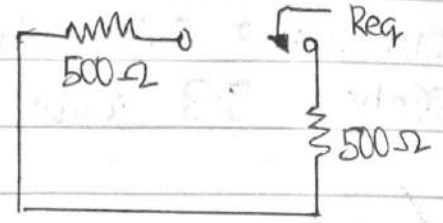
1)



$R_{eq} = 1000 = 10^3 \Omega$

$L = 1 \times 10^{-3}$ mH

$\tau = \frac{L}{R_{eq}} = \frac{10^{-3}}{10^3} s$

$= 10^{-6} s =$

$= \underline{1 \mu s}$

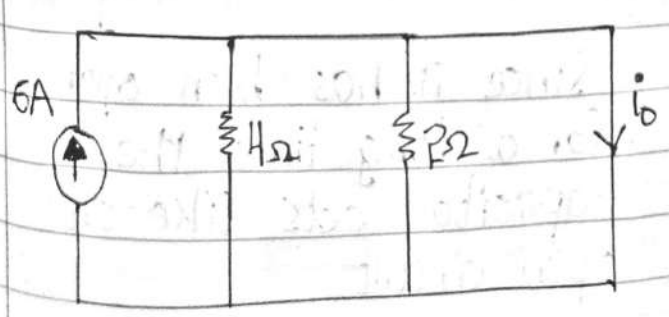
2) * Note the difference between field and flux

3) $Q = CV$

$C = \frac{Q}{V} \quad \frac{\{\text{coulombs}\}}{\{\text{volt}\}}$

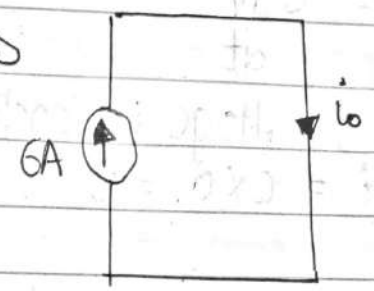
4)

* Just before the switch is opened, the inductor acts as a short circuit.



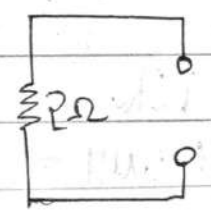
* The 4Ω and 2Ω resistors are shorted {connected in parallel with a short circuit that can be seen as a 0Ω resistor}

⇒



$i_o = 6A$

* after it is opened: the equivalent resistance is:



$R_{eq} = 2\Omega$, $L = 3H$

$\tau = \frac{L}{R}$, $\frac{1}{\tau} = \frac{R}{L}$

$\frac{1}{\tau} = \frac{2}{3}$

$i(t) = i_o e^{-\frac{t}{\tau}}$

$i(t) = \underline{6e^{-\frac{2}{3}t}}$

5) Check out the 'Oscillators' subsection {10.9.2} in Sadiku if you want to read more.

6) $q = CV$

$i = C\frac{dv}{dt}$

at DC, voltage is constant hence $i = C \times 0 = 0$

Since no current flows it is an <u>open circuit</u>

7) * Section 8.4, Sadiku; Source-Free Parallel RLC...

$R = 20k\Omega = 2 \times 10^4 \Omega$

$L = 0.6\mu H = 6 \times 10^{-7} H$

$C = ?$

$L = 4R^2C$

$\Rightarrow C = \frac{L}{4R^2}$

$= \frac{6 \times 10^{-7}}{4(2 \times 10^4)^2}$

$= 0.375 \times 10^{-15} F$

$= \underline{0.375 fF}$

{femto farad}

8) Clearly an inductor

9) Sadiku mentioned in the Source-free series RLC...; section 8.3 {6th Edition}

10) Miller effect

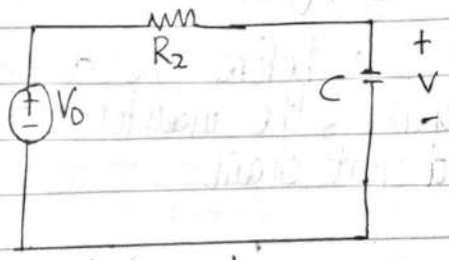
11) Two, Independent

12) Lossless. Same Section 8.3 mentions it

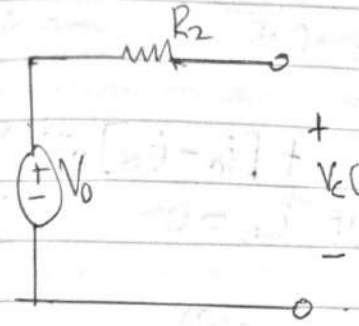
13) Because for an inductor, current increases continuously, the current is the same as it was JUST before it was closed.

14) Same as 13.

15) * $t < 0$



Since it has been open for a long time the capacitor acts like an open circuit



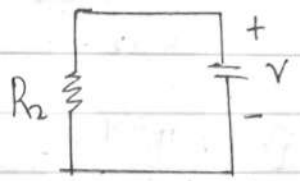
$V_c(0^-) = V_0$

But $V_c(0^-) = V_c(0^+)$

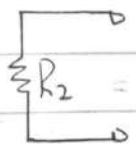
$V_c(0^+) = V_0$

* $t > 0$

it is now a source less RC circuit



$R_{eq} = R_2$



$\tau = R_{eq}C = R_2C$

$\Rightarrow \underline{v(t) = V_0 e^{-\frac{t}{R_2C}}}$

16 $\int_{-\infty}^{t} \delta(t) = \begin{cases} 0, & t < 0 \\ 1, & t > 0 \end{cases}$

But $u(t) = \begin{cases} 0, & t < 0 \\ 1, & t > 0 \end{cases}$

$\Rightarrow \underline{\int_0^t \delta(t) = u(t)}$

17) 2mH and 1mH are in parallel hence their resultant is

$\frac{2(1)}{2+1}$ mH $= \frac{2}{3}$ mH

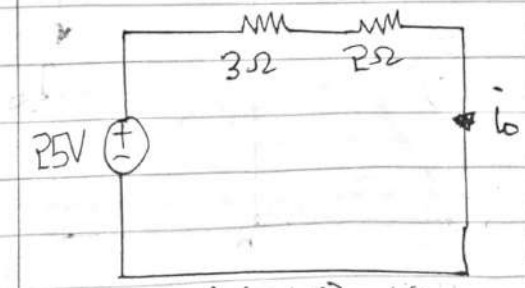
$= 666.66\mu H$

$666.66 + 1 \approx \underline{667\mu H}$

18. The homogeneous solution is basically the solution to the 'source-less part of the response'.

19.) when $t < 0$

* the assumption is that the switch must have been open for a long time so the inductor is a short circuit



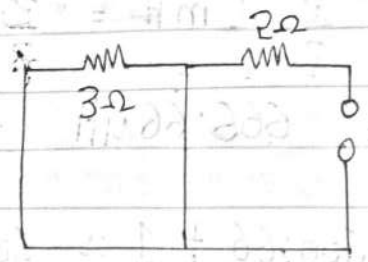
$-25 + i_o(3+2) = 0$

$i_o = \frac{25}{5}$

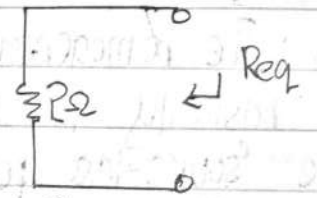
$i_o = 5A$

$* \; t > 0$

$\Rightarrow R_{eq}$



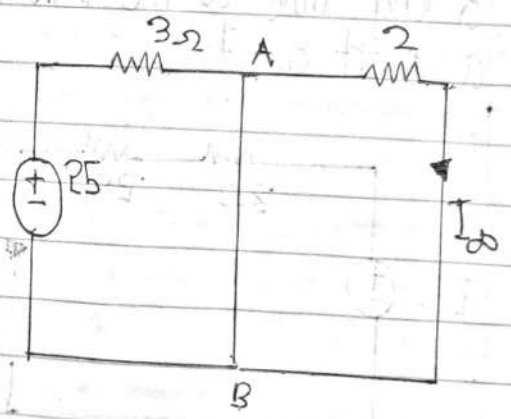
The 3Ω is shorted



$R_{eq} = 2\Omega$

$\Rightarrow I_\infty$

after a very long time the inductor is a short circuit again



All the current goes into the AB ; hence

$I_\infty = 0$

$\tau = \frac{L}{R} = \frac{4}{2} = 2$

$\frac{1}{\tau} = 0.5$

$i(t) = i_\infty + [i_0 - i_\infty]e^{-t/\tau}$

but $i_\infty = 0$

$i(t) = i_0 e^{-t/\tau}$

$i(t) = \underline{5e^{-0.5t}}$

20) $\tau = RC$

21) $\omega = \frac{1}{\sqrt{LC}}$

$f = \frac{1}{2\pi\sqrt{LC}}$

$L = 2.5 \times 10^{-9} H$

$C = 10^{-12} F$

$f = \frac{1}{2\pi\sqrt{2.5 \times 10^{-9} \times 10^{-12}}}$

$= 3.183 \times 10^{9} Hz$

$\simeq \underline{3.18 \, GHz}$

$Z_0 = \sqrt{\frac{L}{C}}$

$Z_0 = \sqrt{\frac{2.5 \times 10^{-9}}{10^{-12}}} = \underline{50\Omega}$

22 Dielectric leakage

23 Loss in winding

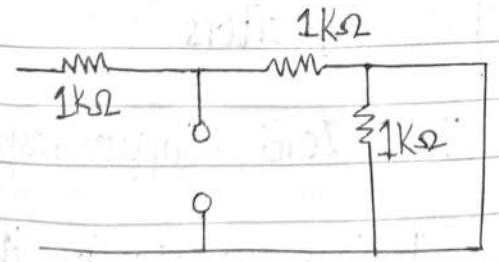
24 $\tau = \frac{L}{R}$

25 You must have seen that after a long time in a DC circuit a capacitor and an inductor acts like an open and short circuit respectively. A resistor never loses its steeze.

26 Them force am, na external inputs

27 * Req

Current sources are open circuited and voltage sources short circuited



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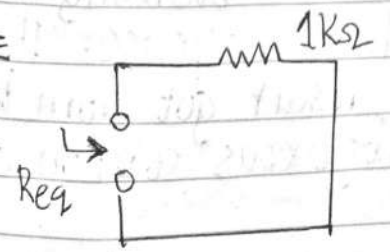

$\Rightarrow Req = 1K\Omega$

$\tau = Req\,C$

$Req = 10^3\Omega$

$C = 10^{-6}F$

$\tau = 10^3 \times 10^{-6} = 10^{-3}s$

$\tau = \underline{0.001s}$

28) I, II, III

Sections 8.3 and 8.4, Sadiku

29)

10pF and 30pF are in parallel so their net is 40pF

$$\frac{40 \times 10^{-12} \times 1 \times 10^{-6}}{40 \times 10^{-12} + 10^{-6}}$$

$$\approx 40 \times 10^{-12} = \underline{40pF}$$

30) Check the oscillator subsection I mentioned in no. 5

31 Of course.

32 Me I no understand wetin them deh talk.

33 $\frac{4L}{R^2} = \frac{4(20\times10^{-3})}{50^2}$

$= 32\mu F$

$C = 13nF$

Since $C < \frac{4L}{R^2}$

it is a decaying sinusoid

* Section 8.3, Sadiku

34 Energy is transferred between the inductor and capacitor but the total energy is constant

$L = 2\times10^{-4} H$

$C = 2\times10^{-6} F$

let the total energy be E. At any arbitrary time t

$\frac{1}{2}CV_t^2 + \frac{1}{2}LI_t^2 = E$

$\Rightarrow E = \frac{1}{2}\cdot 2\times10^{-6}\times 4^2$

$+ \frac{1}{2}\times 2\times10^{-4}\times 1^2$

$E = 1.16\times10^{-4} J$

* max I

when I is max, V is 0

$\frac{2}{2}\times10^{-4}\cdot I^2 = 1.16\times10^{-4}$

$I^2 = 1.16$

$I = \sqrt{1.16} = \underline{1.077A}$

* max V

$\frac{2}{2}\times10^{-6}\cdot V^2 = 1.16\times10^{-4}$

$V^2 = 116$

$V = \sqrt{116} = \underline{10.77V}$

35. Signals and systems guys will be smiling

36. First order.

37. Inductors and capacitors

38 Zero Input response

- This is basically the natural response. It is the result got from the homogeneous solution alone

39 Zero state response
Otherwise known as forced response.

40 $C = A + B\sin 2\pi ft$
V is constant

$q = CV$

$i = \frac{dq}{dt} = \frac{d[CV]}{dt}$

But C varies and V is constant

$\Rightarrow i = V\frac{dC}{dt}$

$\frac{dC}{dt} = B2\pi f\cos 2\pi ft$

$i(t) = \underline{\underline{VB2\pi f\cos 2\pi ft}}$

3:30 25

#Wicked_usd
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now

Question 1

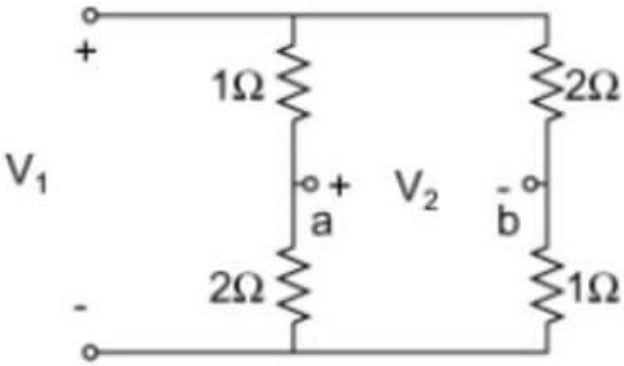
Not yet answered

Marked out of 1.00

Flag question

1

In the circuit below, if $V_1 = 10$ V, what is V_2?



Select one:

- a. $\frac{10}{3}$ V
- b. $\frac{11}{3}$ V
- c. $\frac{8}{3}$ V
- d. $\frac{7}{3}$ V

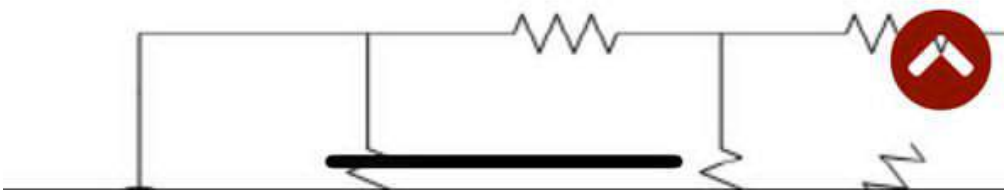
Question 2

Not yet answered

Marked out of 1.00

Flag question

What is the power delivered by the 5A source in the series - parallel circuit shown?



3:32

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Select one:

- a. $\frac{10}{3}$ V
- b. $\frac{11}{3}$ V
- c. $\frac{8}{3}$ V
- d. $\frac{7}{3}$ V

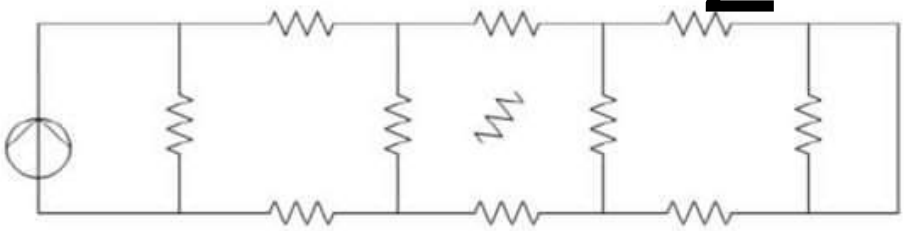
Clear my choice

Question 2 Not yet answered

Marked out of 1.00 Flag question

What is the power delivered by the 5A source in the series - parallel circuit shown?

2



Select one:

- a. 500W
- b. 250W
- c. 340W
- d. 600W

Question 3 Not yet answered

Marked out of 1.00 Flag question

A planar graph has 6 branches and 3 meshes. Then

3:32 24

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Question 3 Not yet answered

Marked out of 1.00 Flag question

3

A planar graph has 6 branches and 3 meshes. Then the number of nodes is

Select one:

- a. 6
- b. 4
- c. 3
- d. 2

Question 4 Not yet answered

Marked out of 1.00 Flag question

4

The superposition theorem requires as many circuits to be solved as there are

Select one:

- a. Independent sources
- b. Nodes and independent loops
- c. Independent sources and nodes
- d. Independent sources and nodes and meshes

Question 5 Not yet answered

Marked out of 1.00 Flag question

5

In a circuit, for maximum power transfer, the load impedance should be

Select one:

- a. larger than the output impedance of the circuit
- b. smaller than the source impedance of the circuit
- c. equal to the source impedance of the circuit
- d. half the output impedance of the circuit

Question 6 Not yet answered

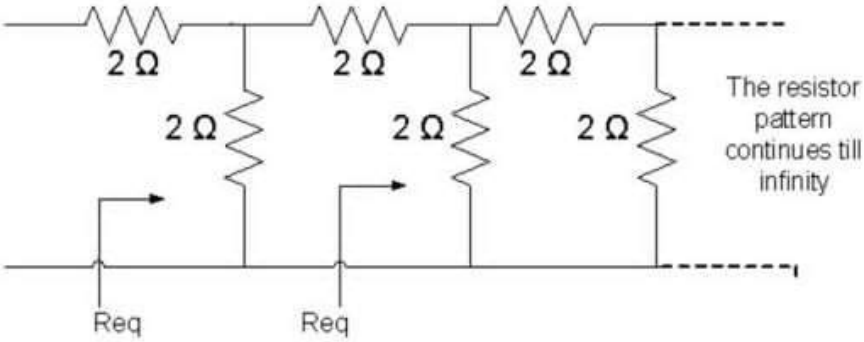
Marked out of 1.00 [redacted]

Question 7 Not yet answered

Marked out of 1.00 Flag question

6

Determine the equivalent resistance of the ladder network shown below:



Select one:

- a. 3.33 Ω
- b. 3.25 Ω
- c. 2.41 Ω
- d. 1.50 Ω

Clear my choice

Question 8 Not yet answered

Marked out of 1.00 Flag question

7

Which of these characteristic equations represent a non-linear element?

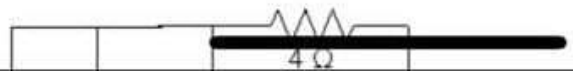
Select one:

- a. $v + \frac{3}{2}i = 0$
- b. $i + 0.5v = 5$
- c. $v + 3^2 i = 0$
- d. $i = i_s(e^{\frac{v_D}{nvT}} - 1)$

Question 9 Not yet answered

Marked out of 1.00 Flag question

Determine the value of R that makes 2 A current flow through R in the network below.



a. larger than the output impedance of the circuit

b. smaller than the source impedance of the circuit

c. equal to the source impedance of the circuit

d. half the output impedance of the circuit

Clear my choice

Question 6 Not yet answered

Marked out of 1.00 Flag question

8

When a source is delivering maximum power to a load, the efficiency of the circuit

Select one:

a. is always 50%

b. depends on the circuit parameters

c. is always 75%

d. is independent of source impedance.

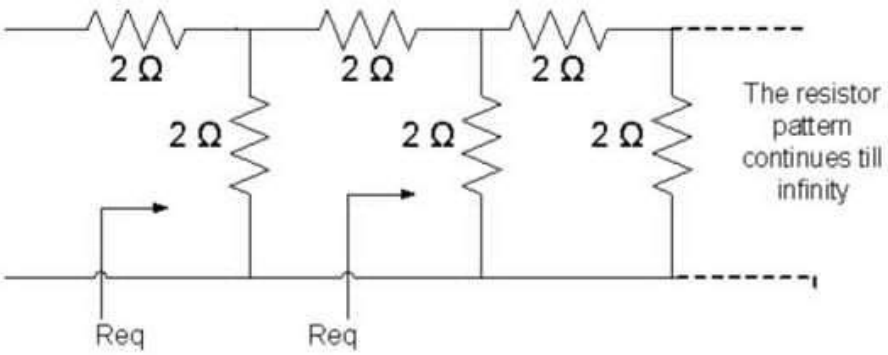
Clear my choice

Question 7 Not yet answered

Marked out of 1.00 Flag question

9

Determine the equivalent resistance of the ladder network shown below:



Select one:

a. 3.33 Ω

b. 3.25 Ω

c. 2.41 Ω

d. 1.50 Ω

3:38

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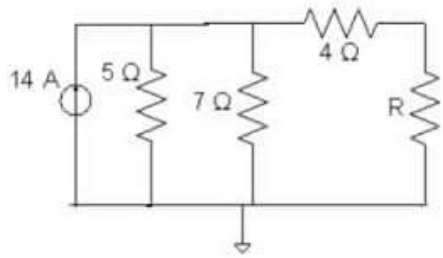
Question 9 Not yet answered

Marked out of 1.00 Flag question

Determine the value of R that makes 2 A current flow through R in the network below.

10



Select one:

- a. 13.2 Ω
- b. 13.4 Ω
- c. 13.5 Ω
- d. 13.8 Ω

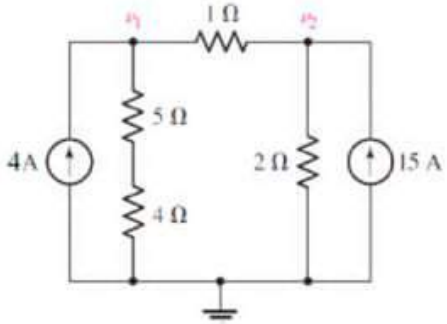
Clear my choice

Question 10 Not yet answered

Marked out of 1.00 Flag question

11

Using nodal analysis, determine $v_1 - v_2$ in the network shown below:



Select one:

- a. 0.5 V
- b. 0.6 V
- c. 0.7 V
- d. 0.8 V

Clear my choice

3:41

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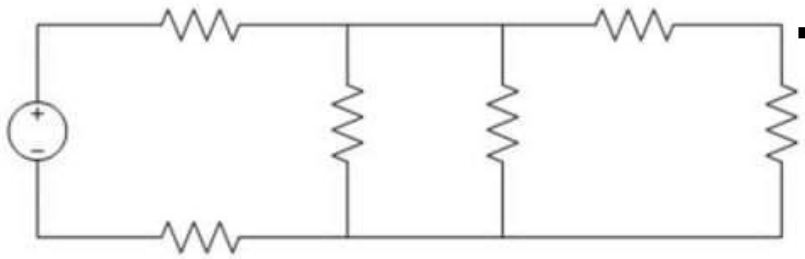
Determine the current through the 40 Ω resistor in the series – parallel connected circuit below.

12



Select one:

- a. 0.5A
- b. 0.25A
- c. 0.167A
- d. 0.6A

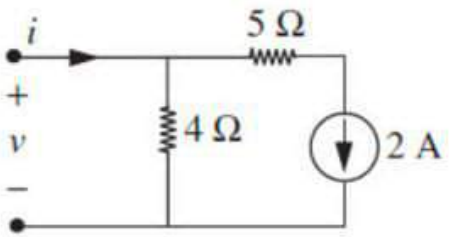
Clear my choice

Question 14 Not yet answered

Marked out of 1.00 Flag question

The i-v law describing the network shown below is given as:

13



Select one:

- a. $i = \frac{v}{4} + 2$
- b. $i = 2$
- c. $i = \frac{9v}{} + 2$

3:40

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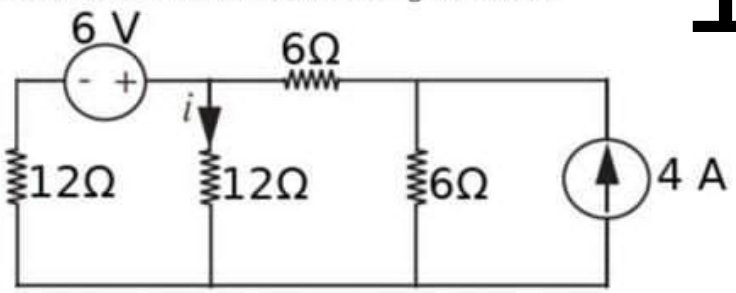
Question 11 Not yet answered

Marked out of 1.00 Flag question

14

Use the node method to find i in the figure below:



Select one:

- a. 0.83A
- b. 0.55A
- c. 0.74A
- d. 0.65A

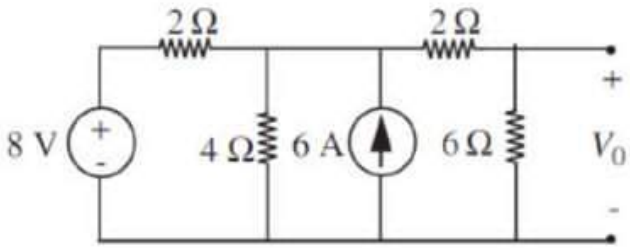
Clear my choice

Question 12 Not yet answered

Marked out of 1.00 Flag question

15

In the figure below, the response V_0 due to the input current source is_____



Select one:

- a. 8.56 V
- b. 5.14 V
- c. 3.43 V
- d. 4.57 V

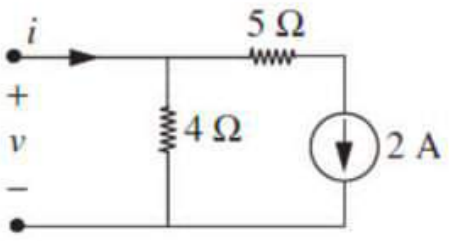
Question 13 Not yet answered

Question 14 Not yet answered

Marked out of 1.00 Flag question

16

The i-v law describing the network shown below is given as:



Select one:

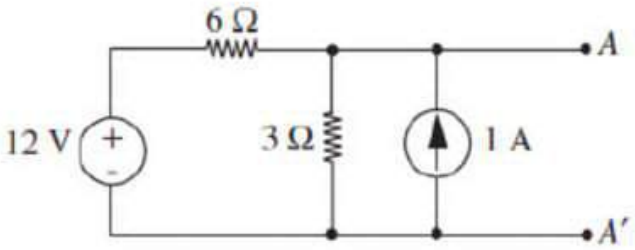
- a. $i = \frac{v}{4} + 2$
- b. $i = 2$
- c. $i = \frac{9v}{20} + 2$
- d. $i = \frac{v}{4} - 2$

Question 15 Not yet answered

Marked out of 1.00 Flag question

17

Determine the Norton equivalent I_N and R_N across the terminal AA' in the network shown below:



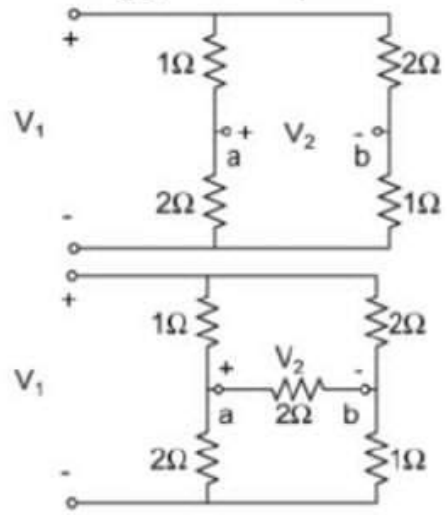
Select one:

- a. $I_N = 1\ A$ and $R_N = 2\ \Omega$
- b. $I_N = 2\ A$ and $R_N = 2\ \Omega$
- c. $I_N = 3\ A$ and $R_N = 2\ \Omega$
- d. $I_N = 4\ A$ and $R_N = 3\ \Omega$

Question 16 Not yet answered

Consider the circuit of figure A, if a 2 ? resistor is connected across port a-b as shown in figure B, what is V_2, given that V_1 = 10 V?

18



(A) (B)

Select one:

- a. 2.2 V
- b. 2.5 V
- c. 2.0 V
- d. 2.4 V

Question 17 Not yet answered

Marked out of 1.00 Flag question

19

Regarding Norton's equivalent, which of the following is not correct?

Select one:

- a. Norton's equivalent is the voltage equivalent of the network.
- b. Norton's equivalent is the current equivalent of the network.
- c. Norton's equivalent resistance is the same as the Thevenin equivalent resistance.
- d. The load is connected in parallel to the Norton's equivalent resistance and Norton's equivalent source.

3:41

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Question 18 Not yet answered

Marked out of 1.00 Flag question

20

Kirchhoff's Voltage Law (KVL) obeys the conservation of _____?

Select one:

- a. Mass
- b. Momentum
- c. Charge
- d. Energy

Clear my choice

Question 19 Not yet answered

Marked out of 1.00 Flag question

21

Kirchhoff's Current Law (KCL) obeys the conservation of _____?

Select one:

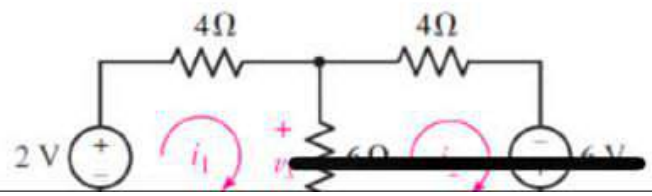
- a. Mass
- b. Momentum
- c. Charge
- d. Energy

Clear my choice

Question 20 Not yet answered

Marked out of 1.00 Flag question

Determine the mesh current i_1 in the network shown below if the dependent source $A = 2i_1$



3:42

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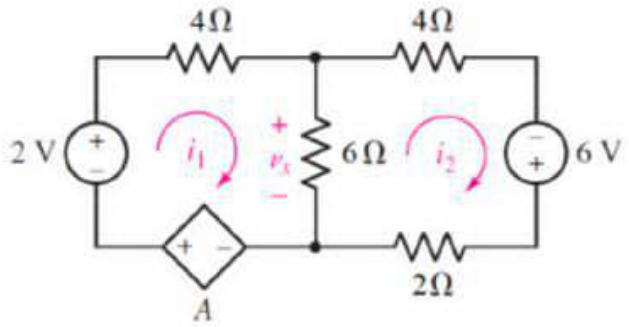
200lEVEL-uPDATE/mATERIALS
Yes
now

Question 20 Not yet answered

Marked out of 1.00 Flag question

22

Determine the mesh current i_1 in the network shown below if the dependent source $A = 2i_1$



Select one:

- a. 1.10 A
- b. 1.45 A
- c. 1.50 A
- d. 1.00 A

Clear my choice

Previous page Next page

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17	18	19	20	21	22	23	24

Finish attempt ...

Time left 0:06:58

3:42

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Question 22

Not yet answered

Marked out of 1.00

Flag question

23

Nonlinear networks do not satisfy

Select one:

- a. Superposition condition.
- b. Homogeneity condition.
- c. Superposition and homogeneity conditions.
- d. Associative condition.

Clear my choice

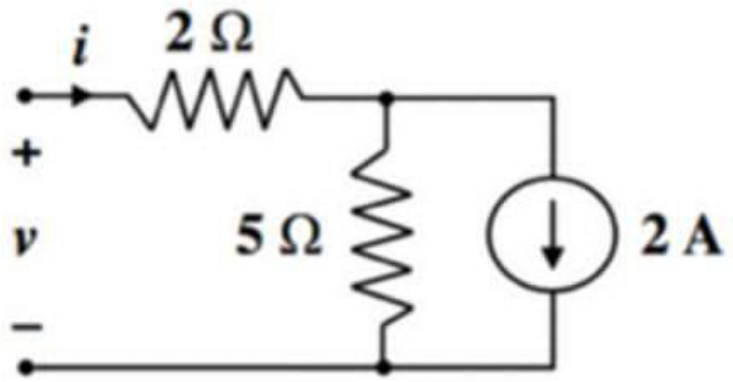
Question 23

Not yet answered

Marked out of 1.00

Flag question

The i-v law describing the network shown below is given as:



Select one:

3:42

vlearn.unilag.edu.ng

Question 21

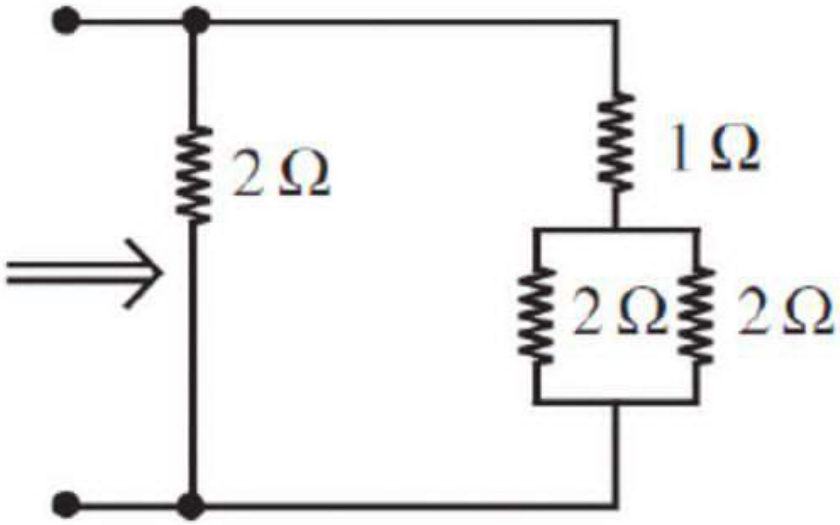
Not yet answered

Marked out of 1.00

Flag question

24

Determine the equivalent resistance looking into the network shown below:



Select one:

- a. 4 Ω
- b. 3 Ω
- c. 2 Ω
- d. 1 Ω

Clear my choice

Question 22

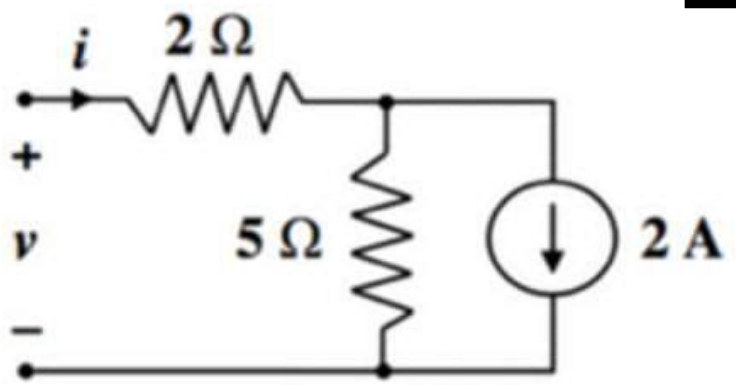
Not yet answered

3:43

vlearn.unilag.edu.ng

The i-v law describing the network shown below is given as:

25



Select one:

- a. $i = \frac{v}{7} + \frac{10}{7}$
- b. $i = -\frac{v}{7} + \frac{10}{7}$
- c. $i = \frac{v}{7} - \frac{10}{7}$
- d. $i = \frac{-v}{7} - \frac{10}{7}$

Clear my choice

Question 24 Not yet answered

Marked out of 1.00 Flag question

A planar graph has 4 nodes and 5 branches. The number of meshes in the dual graph is

3:43

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Question 24 Not yet answered

Marked out of 1.00 **Flag question** 26

A planar graph has 4 nodes and 5 branches. The number of meshes in the dual graph is

Select one:

- a. 5
- b. 4
- c. 3
- d. 2

Clear my choice

Previous page Finish attempt ...

Announcements Jump to...

Quiz navigation

1 2 3 4 5 6 7 8

EEG 211

Quiz 1

1.) Using voltage divider

$$V_a = \frac{2}{2+1} \cdot 10 = \frac{20}{3}$$

$$V_b = \frac{1}{2+1} \cdot 10 = \frac{10}{3}$$

$$V_2 = V_a - V_b = \frac{20-10}{3}$$

$$V_2 = \frac{10}{3}$$

2.) Eenie, meenie, miney, mo

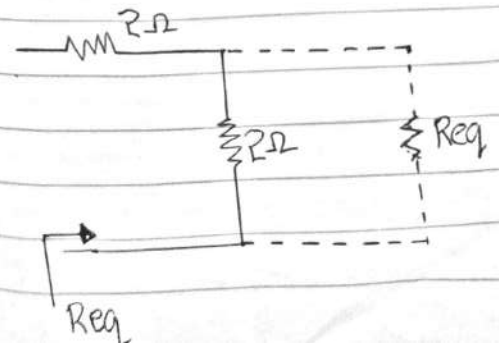
3.) $m = b - n + 1$

$$3 = 6 - n + 1$$
$$n = 6 + 1 - 3$$
$$n = 4$$

~~4.) The most~~

4 Independent sources
5 equal to ...

6



$$R_{eq} = 2 \| R_{eq} + 2$$

$$R_{eq} = \frac{2R_{eq}}{2+R_{eq}} + 2$$

$$R_{eq} = \frac{2R_{eq} + 4 + 2R_{eq}}{2+R_{eq}}$$

$$2R_{eq} + R_{eq}^2 = 2R_{eq} + 4 + 2R_{eq}$$

$$\Rightarrow R_{eq}^2 - 4R_{eq} - 4 = 0$$

$$R_{eq} = 1 \pm \sqrt{5}$$

But $R_{eq} > 0$

$$\Rightarrow R_{eq} = 1 + \sqrt{5} \simeq 3.24$$

7) The option screams: "I am not linear"

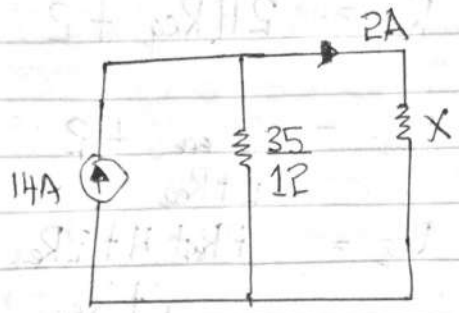
8) 50%

9) Repeated, check no. 6

10 5 and 7 are in parallel and the equivalent

$$\rightarrow \frac{5(7)}{5+7} = \frac{35}{12}$$

Also let $4 + R' = X$



Using current divider

$$\frac{35/12}{35/12 + x} \times 14 = 2$$

$$\frac{35}{12} = \frac{1}{7} \times \left(\frac{35}{12} + x\right)$$

$$\frac{35}{12} = \frac{x}{7} + \frac{5}{12}$$

$$\Rightarrow X = 17.5$$

$$R = X - 4$$

$$\underline{\underline{R = 13.5}}$$

11 From node 1

$$\frac{V_1 - V_2}{1} + \frac{V_1}{9} = 4$$

$$9V_1 - 9V_2 + V_1 = 4(9)$$

$$10V_1 - 9V_2 = 36 \quad \ldots \mathrm{I}$$

From node 2

$$\frac{V_2 - V_1}{1} + \frac{V_2}{2} = 15$$

$$2V_2 - 2V_1 + V_2 = 15(2)$$

$$3V_2 - 2V_1 = 30$$

$$\Rightarrow 9V_2 - 6V_1 = 90 \ldots \mathrm{II}$$

Add I and II

$$4V_1 = 126$$

$$V_1 = \frac{126}{4}$$

$$V_1 = 31.5V$$

Sub in I

$$10(31.5) - 9V_2 = 36$$

$$9V_2 = 315 - 36$$

$$\frac{9V_2}{9} = \frac{279}{9}$$

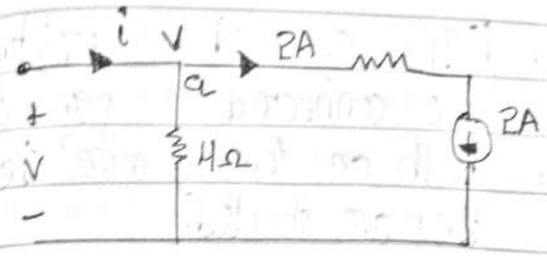
$$V_2 = 31.0V$$

$$V_1 - V_2 = 31.5 - 31.0$$

$$= \underline{\underline{0.5V}}$$

12) Eenie, meenie, miney, mo

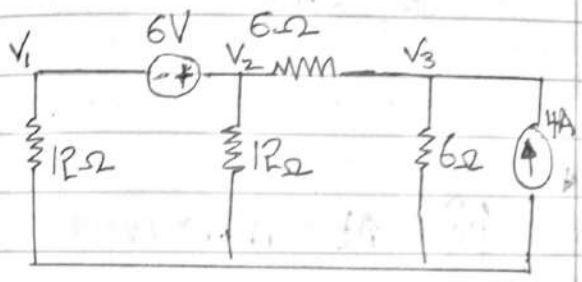
13



Nodal analysis at node a

$$\frac{v}{4} + 2 = i$$

14



at node 3

$$\frac{V_3}{6} + \frac{V_3 - V_2}{6} = 4$$

$$2V_3 - V_2 = 24$$

supernode $V_1 \leftrightarrow V_2$

$$\frac{V_1}{12} + \frac{V_2}{12} + \frac{V_2 - V_3}{6} = 0$$

$$V_1 + V_2 + 2V_2 - 2V_3 = 0$$

$$V_1 + 3V_2 - 2V_3 = 0$$

also $V_2 - V_1 = 6$

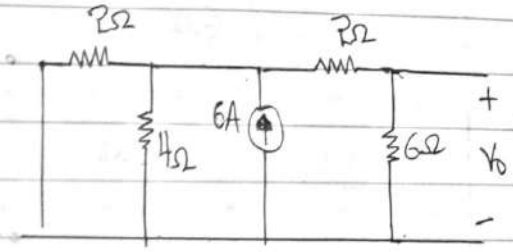
$$V_1 + 3V_2 - 2V_3 = 0$$
$$-V_1 + V_2 + 0V_3 = 6$$
$$0V_1 - V_2 + 2V_3 = 24$$

Solving simultaneously;

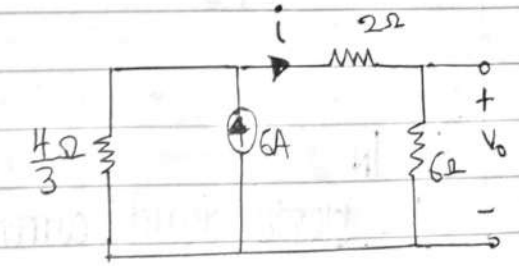
$V_2 = 10$, $V_1 = 4$, $V_3 = 17$

$$i = \frac{V_2}{12} = \frac{10}{12} = \underline{0.833A}$$

15.) V_o due to the current source {switch off the voltage source}



$$4 \| 2 = \frac{2(4)}{2+4} = \frac{4}{3}\Omega$$



Using current divider:

$$i = \frac{4/3}{8 + 4/3} \cdot 6 = \frac{6}{7}$$

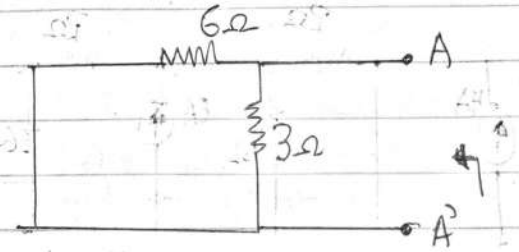
$$V_o = 6i = \frac{6(6)}{7} = \underline{5.14V}$$

* The question says due to the current source alone and it is 5.14V. I don't remember why

exactly 8.56V was chosen. I heard it was the '1ms answer', I think; can't say for sure.

16.) Repeated, check no. 13

17.) * For R_N

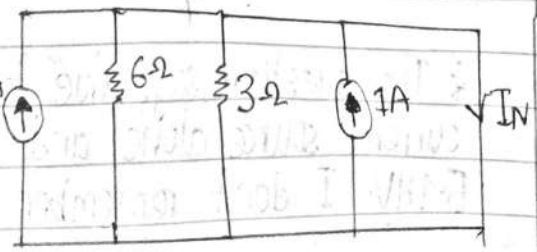


$$R_N = 6 \| 3 = \frac{6(3)}{6+3} = \underline{\underline{2\Omega}}$$

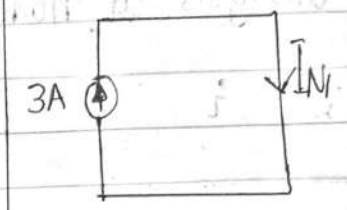
* I_N

The short circuit current

Transform the 12V in series with the 6Ω to a $\frac{12}{6}$ A in parallel



The 6Ω and 3Ω resistors are connected in parallel with an 'empty wire' hence they are shorted.



$$\underline{\underline{I_N = 3A}}$$

18.) At node a

$$\frac{V_a}{2} + \frac{V_a - 10}{1} + \frac{V_a - V_b}{2} = 0$$

$$V_a + 2V_a - 20 + V_a - V_b = 0$$

$$4V_a - V_b = 20 \quad \ldots \mathrm{I}$$

At node b

$$\frac{V_b}{1} + \frac{V_b - 10}{2} + \frac{V_b - V_a}{2} = 0$$

$$2V_b + V_b - 10 + V_b - V_a = 0$$

$$4V_b - V_a = 10 \quad \ldots \mathrm{II}$$

$4\mathrm{II}$:

$$16V_b - 4V_a = 40$$

$4\mathrm{II} + \mathrm{I}$

$$15V_b = 60$$

$V_b = \frac{60}{15} = 4V$

Sub in I

$4V_a - 4 = 20$

$\Rightarrow V_a = 6V$

$V_2 = V_a - V_b = 6 - 4$

$V_2 = \underline{2V}$

19.) Current equivalent

20.) Energy

21.) Charge

22.)

Mesh I

$-2i_1 - 2V + 4i_1 + 6(i_1 - i_2) = 0$

$-2i_1 - 2V + 4i_1 + 6i_1 - 6i_2 = 0$

$8i_1 - 6i_2 = 2 \ldots (i)$

Mesh II

$2i_2 + 6(i_2 - i_1) + 4i_2 - 6 = 0$

$2i_2 + 6i_2 - 6i_1 + 4i_2 - 6 = 0$

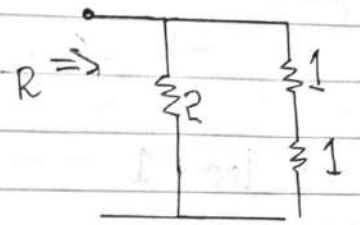
$12i_2 - 6i_1 = 6 \ldots ii$

Solve i and ii simultaneously

$i_1 = \underline{1V}$, $i_2 = 1V$

23.) A linear network satisfies superposition and homogeneity conditions

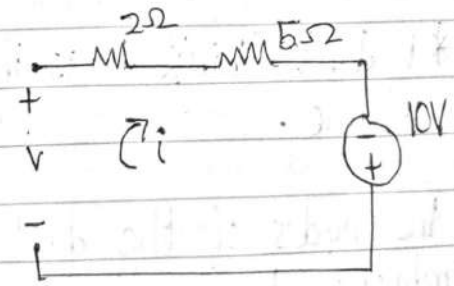
24.) $2 \| 2 = \frac{2(2)}{2+2} = 1$



$R = (1+1) \| 2$

$\frac{2(2)}{2+2} = \underline{\underline{1\Omega}}$

25.) Of course there are several approaches. I'll first attempt with transformation {source transformation}



From KVL:

$-v + i(2+5) - 10 = 0$

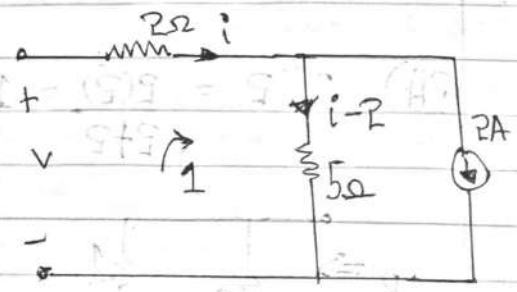
$-v + 7i - 10 = 0$

$7i = v + 10$

$i = \frac{v}{7} + \frac{10}{7}$

OR

Apply KCL at the node and we have:



KVL at loop 1

$$-v + 2i + 5(i-2) = 0$$
$$-v + 7i - 10 = 0$$

$$7i = v + 10$$
$$i = \frac{v}{7} + \frac{10}{7}$$

26 *I don't think it is in the scheme.

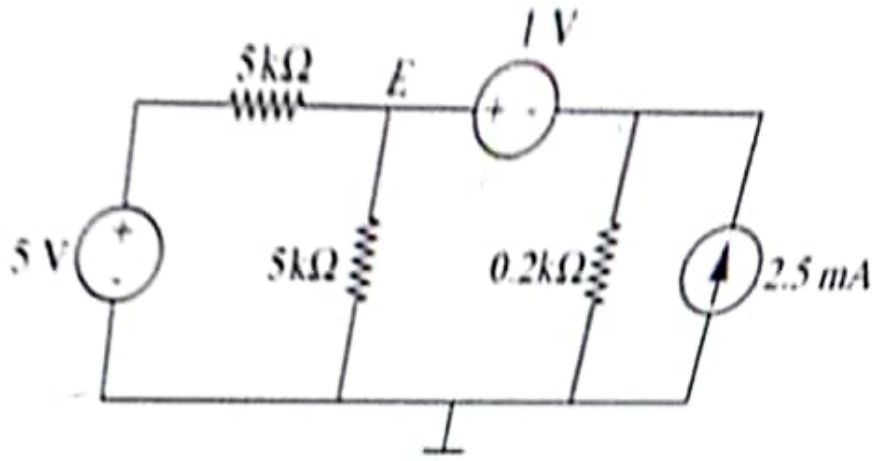
The nodes of the dual network become the branches of the original circuit, and... if you wan read am, google deh.

Question 6

Not yet answered Marked out of 1.00

Flag question

Determine the node voltage E in the network shown below



Select one:

- a. 2.24 V
- b. 1.45 V
- c. 1.57 V
- d. 2.54 V

16
19
22
23
25
26
27
28
29
30

Question 7

Not yet answered Marked out of 1.00

Flag question

Finish attempt ...

Time left 0:07:45

ENG 6:12 PM

Determine the value of R to make 2 A current flow through the resistor R in the network shown below.

Select one:

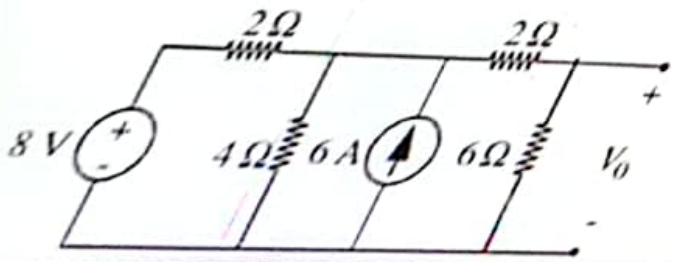
- a. 13.2 Ω
- b. 13.4 Ω
- c. 13.5 Ω
- d. 13.8 Ω

Question 17

Not yet answered Marked out of 1.00

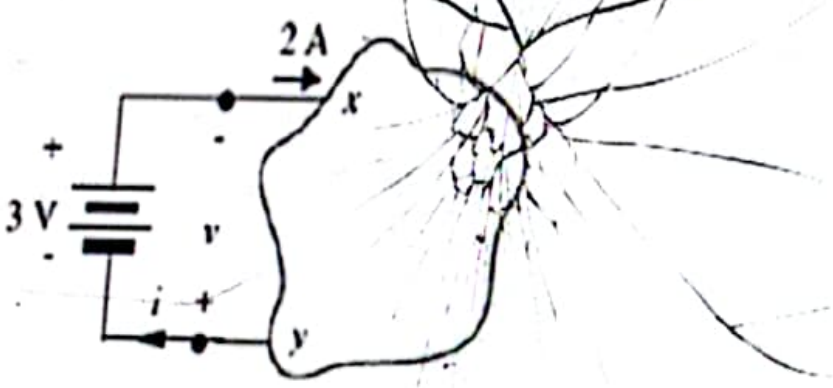
Flag question

In the circuit shown below, the response V_o due to the input current source is____



Flag question

Consider the circuits shown in the figure below. Determine the terminal variables v and i, use the terminal variables to v and i to determine the power, specify whether the power in is stored or delivered by the battery.



Select one:

- a.

  $v = 3\,V, i = -2\,A, p = -6\,W, -$power implies 6 W is delivered by the battery

- b.

  $v = -3\,V, i = -2\,A, p = 6\,W, +$power implies 6 W is stored in the battery

- c.

  $v = -3\,V, i = -2\,A, p = -6W, -$power implies 6 W is delivered by the battery

- d.

  $v = 3\,V, i = 2\,A, p = 6W, +$power implies 6 W is stored in the battery

Next page

Jump to...

Announcements

Select one:

- a. 0.59 A
- b. 1.26 A
- c. 2.43 A
- d. 0.88 A

Question 23

Not yet answered Marked out of 1.00

Flag question

In superposition theorem, in order to determine the response due to one voltage source, all the other voltage sources are _____

Select one:

- a. Shorted
- b. Opened
- c. Removed
- d. Undisturbed

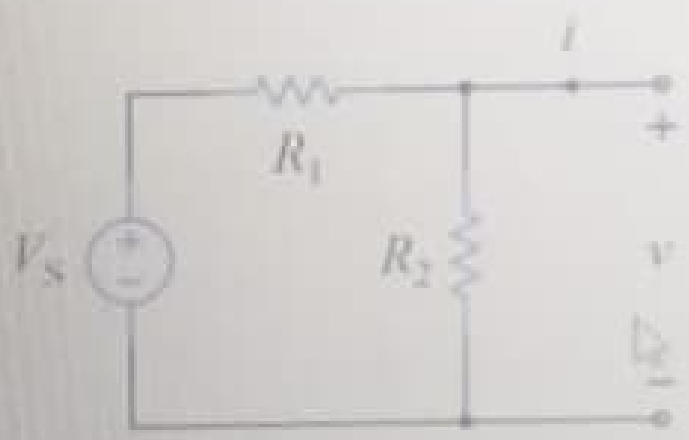
Question 24

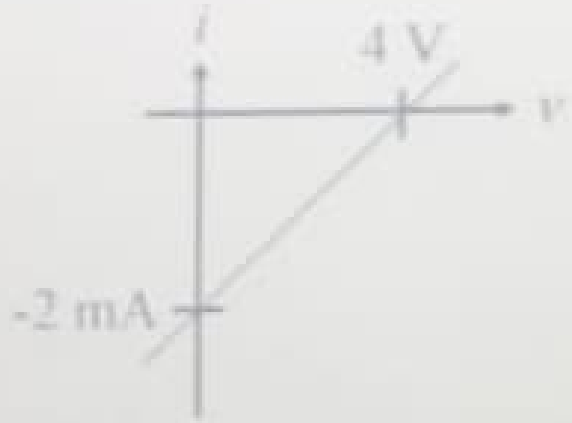
Not yet answered Marked out of 1.00

Flag question

Question 30

Shown below is a network comprising one voltage source with an unknown va
Vs and two unknown resistors R_1 and R_2. Also shown is the I-V characteristic
measured at the port of the network. Finally, it is observed that resistors R_1 a
R_2 in the network dissipate 4mW in total when the port is left as an open circu
Use the I-V relations and the dissipated power to determine Vs, R_1 and R_2.





Select one:

- a. 6V, 3 kΩ and 6 kΩ
- b. 6V, 4 kΩ and 5 kΩ
- c. 6V, 4 kΩ and 3 kΩ
- d. 6V, 3 kΩ and 1.5 kΩ

EEG211_QUIZ1_A

testonline.unilag.edu.ng/mod/quiz/attempt.php?attempt=54751&cmid=399

b. $v = -3V, i = -2A, p = 6W$, +power implies 6 W is stored in the battery

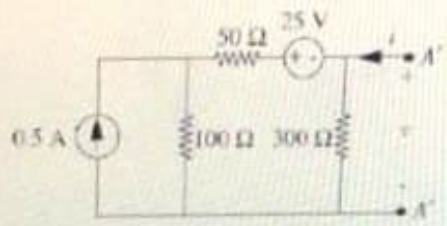
c. $v = -3V, i = -2A, p = -6W$, − power implies 6 W is delivered by the battery

d. $v = 3V, i = 2A, p = 6W$, +power implies 6 W is stored in the battery

Question 3

Not yet answered Marked out of 1.00 Flag question

Determine the Norton equivalent V_N and R_N across the terminal A^1A^1 in the network shown below:



Select one:

a. $I_N = 1.896\ A$ and $R_N = 77.78\ \Omega$

b. $I_N = 0.1667\ A$ and $R_N = 77.78\ \Omega$

c. $I_N = 0.1667\ A$ and $R_N = 100\ \Omega$

d. $I_N = -0.567A$ and $R_N = 90\ \Omega$

Question 4

Flag question

Select one:

- a. Homogeneity
- b. Superposition
- c. Linearity
- d. Non-linearity

Question 7 Not yet answered Marked out of 1.00 Flag question

In a circuit which has two resistors that are connected in parallel (R_1=120Ω and R_2=180Ω) and is supplied by a voltage source of 30v, calculate the voltage drop across the 180Ω resistor.

Select one:

- a. 0.42A
- b. 0.166A
- c. 0.501A
- d. 0.0048A

Question 8 Not yet answered Marked out of 1.00 Flag question

c. Voltage source between two non-reference nodes

d. Between resistor and ground

Question 4

Not yet answered

Marked out of 1.00

Flag question

In a closed loop with two resistors connected in series whereby R_1 is twice the value of R_2. Calculate the voltage drop across R_1 if the voltage in the circuit is 50V.

Select one:

a. 33.3V

b. 50V

c. 16.7V

d. 25V

Question 5

Not yet answered

Marked out of 1.00

ENG

12/2

ins prt sc

delete

backspace

home

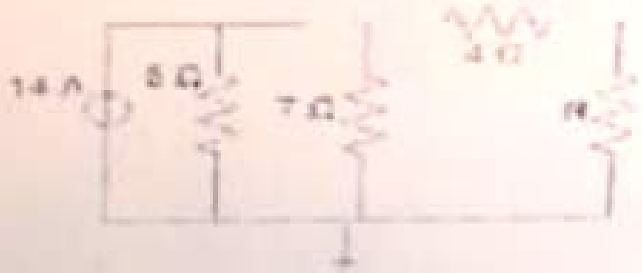
num lock

end

BANG &

Question 19

Flag question



a. 13.2 Ω

b. 13.4 Ω

c. 13.5 Ω

d. 13.8 Ω

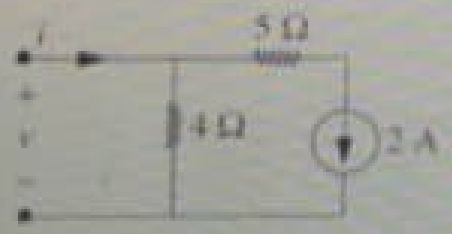
Question 20

Flag question

Question 11

Flag question

The i-v law describing the network shown below is given by



Select one:

- a. $i = \frac{v}{4} + 2$
- b. $i = 2$
- c. $i = \frac{5v}{19} + 2$
- d. $i = \frac{v}{4} - 2$

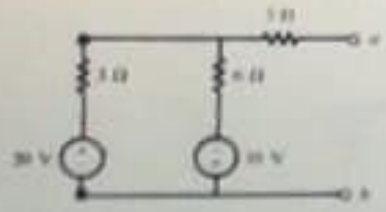
Question 12

Flag question

Question 20

Not yet answered Marked out of 1.00 Flag question

The figure shown is the experimental setup for the validation of Thevenin's theorem. Based on measured data, the Thevenin equivalent circuit was seen to be the same as the series connected 11.2V voltage source and 5.8 Ω resistor. Compare the readings with the computed values.



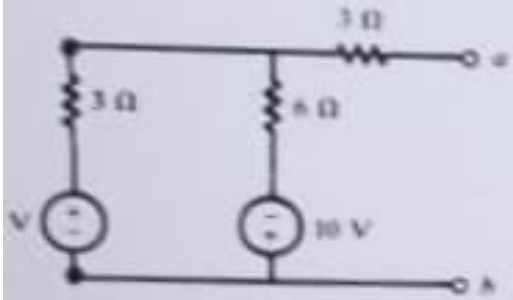
Select one:

- a. 16.0V 5.0 Ω
- b. 11.2V 5.8 Ω
- c. 10.8V 5.8 Ω
- d. 11.0V 5.8 Ω

Next page

stion 12 Not yet answered Marked out of 1.00 Flag question

figure shown is the experimental setup for the validation of Thevenin's theorem. Based on meas
a, the Thevenin equivalent circuit was seen to be the same as the series connected 11.2V voltage
5.8 ? resistor. Compare the readings with the computed values.



ect one:

a. 10.0V; 5.0 ?

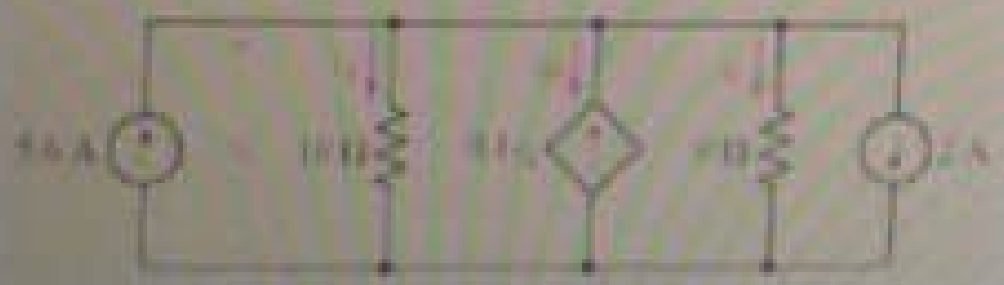
b. 11.2V; 5.8 ?

c. 10.8V; 5.0 ?

d. 11.0V; 5.8 ?

Search

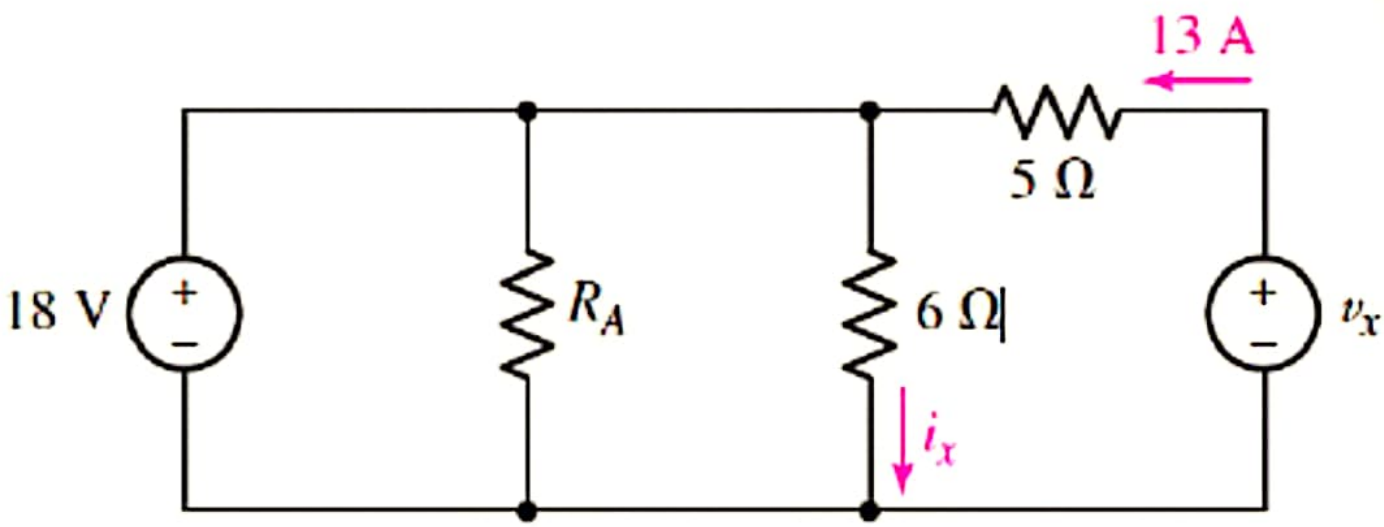
Determine the branch current i_1, i_2 and i_3



Select one:

- a. 3A, -5.6A, 8A
- b. 3A, -6.4A, 5A
- c. 2.6A, -4.5A, 1A
- d. 1.6A, 3A, 5.6A

If the 6 ? resistor draws a current of 3 A and the 18 V source delivers a current of 8 A in the above circuit, determine Vx



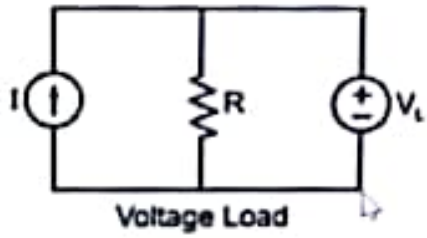
Select one:

- a. 83V
- b. 85V
- c. 84.5V
- d. 82.3V

Question 16

Not yet answered Marked out of 1.00 Flag question

Given that $I = 10\ mA$, and $R = 10\ k\Omega$, determine the value of V_L that maximizes the power delivered to it.



Select one:

- a. $V_L = 50\ V$
- b. $V_L = 100\ V$
- c. $V_L = 150\ V$
- d. $V_L = 200\ V$

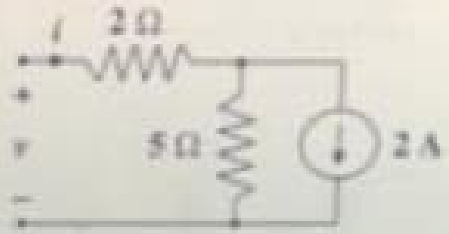
Question 17

Not yet answered Marked out of 1.00 Flag question

Question 21

Flag question

The i-v law describing the network shown below is given as:



Select one:

- $v = i + \frac{10}{i}$
- $v = -i + \frac{10}{i}$
- $v = i - \frac{10}{i}$
- $v = \frac{10}{i} - \frac{10}{i}$

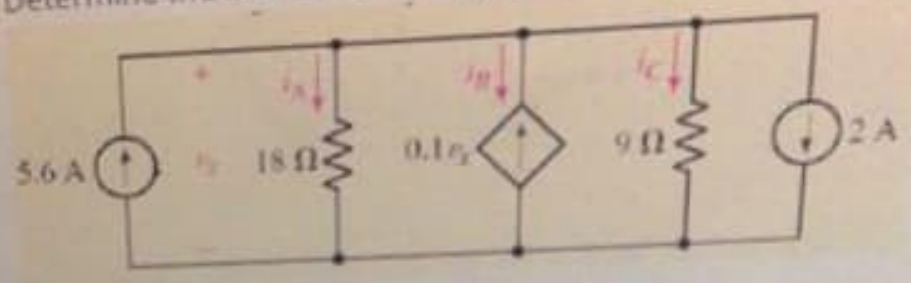
Question 22

Flag question

Question 25

Not yet answered

Determine the branch current i_A, i_B and i_C

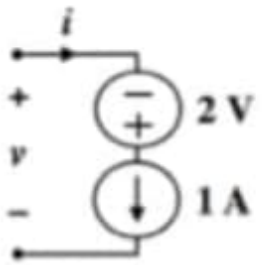


Select one:

- a. 3A, -5.4A, 6A
- b. 3A, -4.4A, 5A
- c. 2.8A, -4.5A, 6A
- d. 2.8A, -5A, 5.8 A

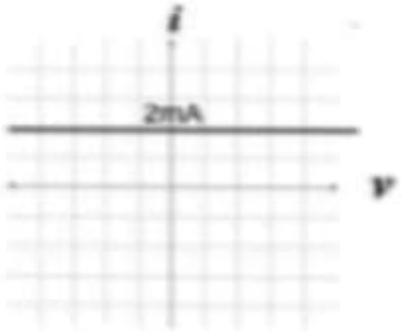
Jump to...

Given the circuit below to analyse in the Lab, the I-V char
form:

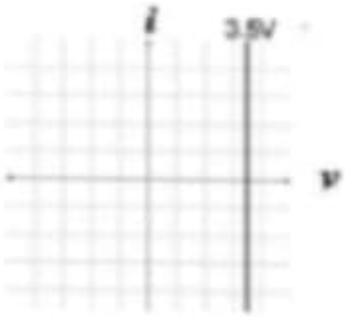


Select one:

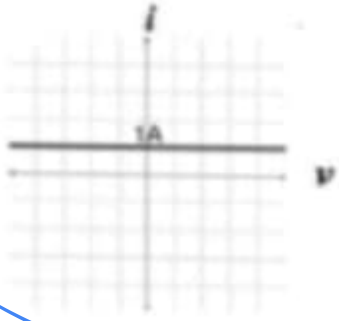
a.



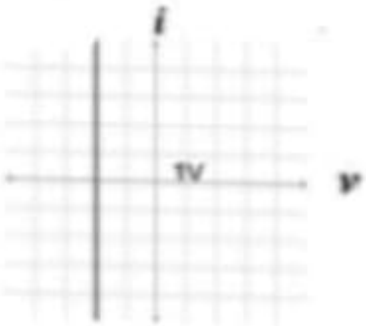
b.



c.



d.



Select one:

- a. $0.53\ W$
- b. $1.25\ W$
- c. $2.45\ W$
- d. $0.43\ W$

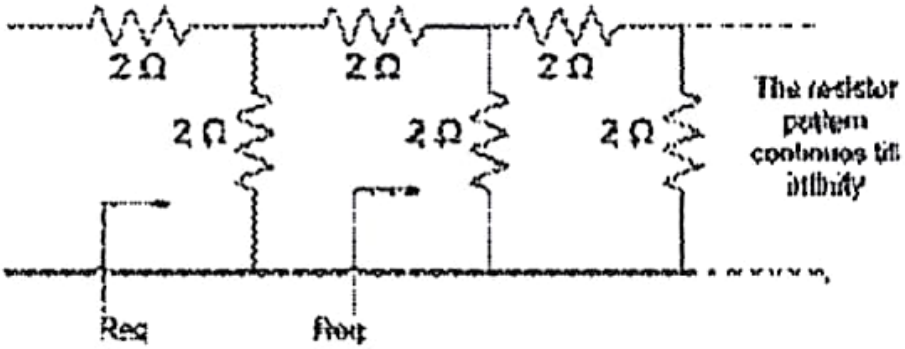
Question 8

Not yet answered

Marked out of 1.00

Flag question

Determine the equivalent resistance of the ladder network shown below:



Select one:

- a. $3.33\ \Omega$
- b. $3.25\ \Omega$
- c. $2.414\ \Omega$
- d. $1\ \Omega$

Question 9

Not yet answered

Marked out of 1.00

Flag question

A generator transfers maximum power to a load when:

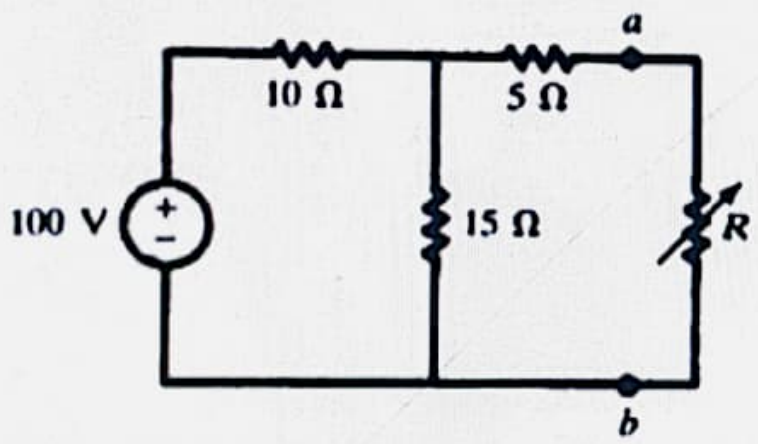
Question 29

Not yet answered

Marked out of 1.00

Flag question

Given the experimental setup shown, the measured resistance that resulted in maximum power transfer across the terminals ***ab*** of the circuit was 11.5 ?. Deduce the computed values of R that will result in maximum power transfer and the maximum power transferred.



Select one:

- a. 11.5 ?; 78.26W
- b. 12.0 ?; 75.00W
- c. 11.0 ?; 81.82W
- d. 12.5 ?; 72.00W

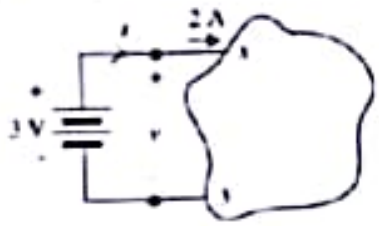
Question 30

Not yet answered

Question 30

Not yet answered Marked out of 1.00 Flag question

Consider the circuits shown in the figure below. Determine the terminal variables v and i, use the terminal variables to v and i to determine the power, specify whether the power in is stored or delivered by the battery.



Select one:

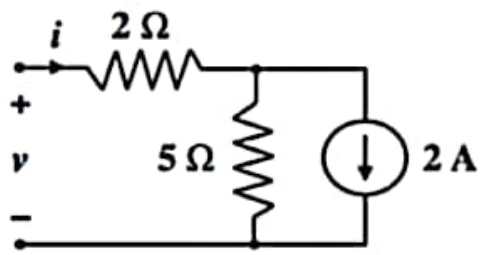
- a. $v = 3V, i = -2A, p = -6W$, −power implies 6 W is delivered by the battery
- b. $v = -3V, i = -2A, p = 6W$, +power implies 6 W is stored in the battery
- c. $v = -3V, i = -2A, p = -6W$, − power implies 6 W is delivered by the battery
- d. $v = 3V, i = 2A, p = 6W$, +power implies 6 W is stored in the battery

- c. $V_L = 150\,V$
- d. $V_L = 200\,V$

Question 14 Not yet answered

Marked out of 1.00 Flag question

The i-v law describing the network shown below is given as:



Select one:

- a. $i = \frac{v}{7} + \frac{10}{7}$
- b. $i = -\frac{v}{7} + \frac{10}{7}$
- c. $i = \frac{v}{7} - \frac{10}{7}$
- d. $i = \frac{-v}{7} - \frac{10}{7}$

Question 15 Not yet answered

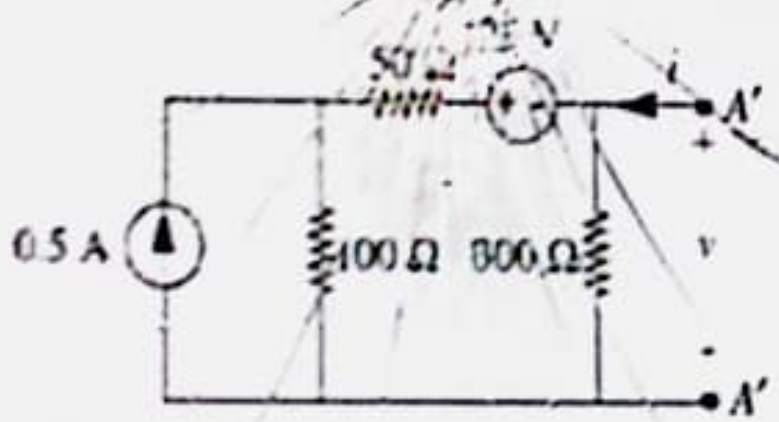
Marked out of 1.00 Flag question

Which of the following is true in the measurement of Thevenin resistance across the load in a network with ideal voltage and current sources?

Select one:

- a. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are removed.

Determine the Norton equivalent V_N and R_N across the terminal A^1A^1 in the network shown below.



Select one:

- a. $I_N = 1.896\ A$ and $R_N = 77.78\ \Omega$
- b. $I_N = 0.1667\ A$ and $R_N = 77.78\ \Omega$
- c. $I_N = 0.1667\ A$ and $R_N = 100\ \Omega$
- d. $I_N = -0.567\ A$ and $R_N = 90\ \Omega$

Question 3

Not yet answered Marked out of 100

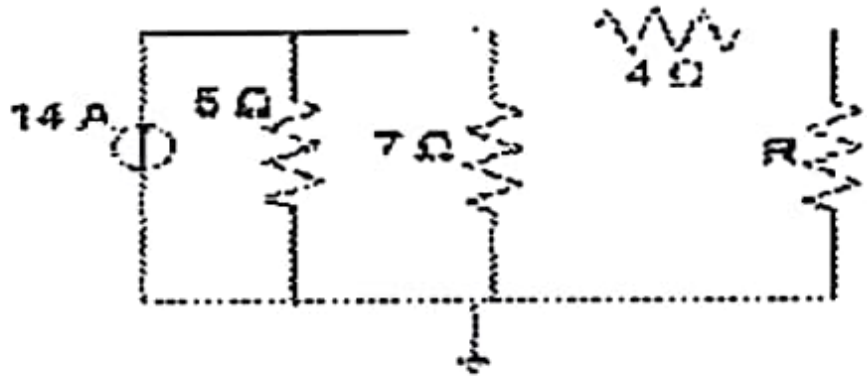
Flag question

A supernode is a node connected at:

Select one:

- a. Periphery of the circuit

Determine the value of R to make 2 A current flow through the resistor R in the network shown below.



Select one:

- a. 13.2 Ω
- b. 13.4 Ω
- c. 13.5 Ω
- d. 13.8 Ω

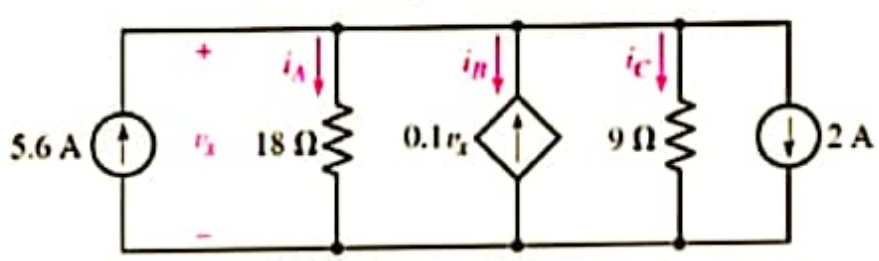
Question 17

Not yet answered

Marked out of 1.00

Flag question

Determine the branch current i_A, i_B and i_C



Select one:

- a. 3A, -5.4A, 6A
- b. 3A, -4.4A, 5A
- c. 2.8A, -4.5A, 6A
- d. 2.8A, -5A, 5.8A

Question 9 Not yet answered Marked out of 1.00 Flag question

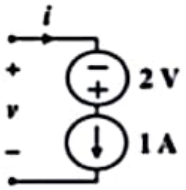
The lumped matter discipline for lumped elements consist of the following constraints except:

Select one:

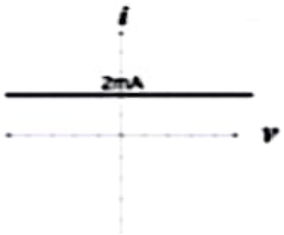
- a. The boundaries are chosen such that the rate of change of magnetic flux linked with any closed loop outside the element must be zero for all time.
- b. The elements must not include any net time-varying charge for all time.
- c. The signal timescales of interest are much larger than the propagation delay of electromagnetic waves across the lumped elements.
- d. The signal timescales of interest are much smaller than the propagation delay of electromagnetic waves across the lumped elements.

Question 17 Not yet answered Marked out of 1.00 Flag question

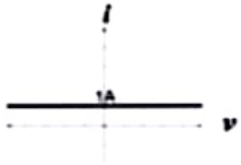
Given the circuit below to analyse in the Lab, the I-V characteristics will be of the form:



Select one:

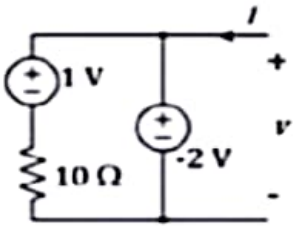
a. 

b.

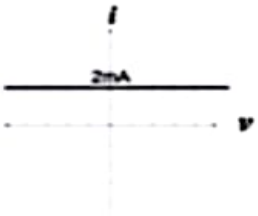
c. 

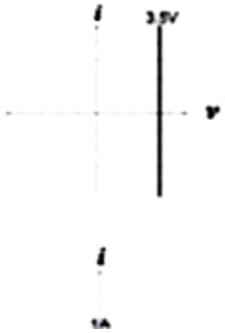
Question 18 Not yet answered Marked out of 1.00 Flag question

Given the circuit below to analyse in the Lab, the I-V characteristics will be of the form:

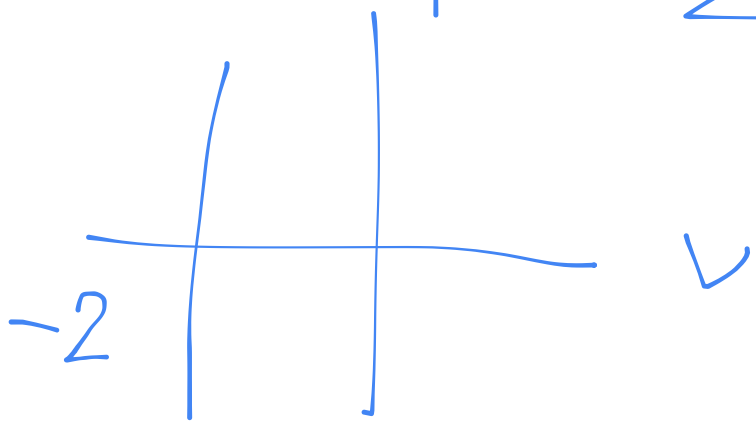


Select one:

- a. 

- b. 

$V = 1 - 2V$

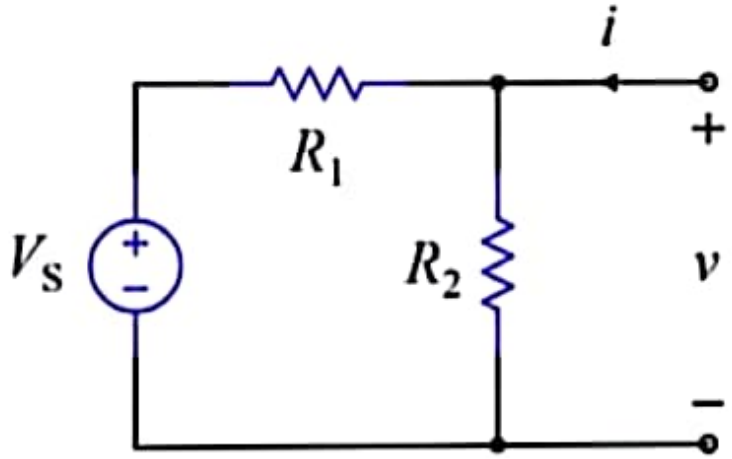


Which of the following is true in the measurement of Thevenin resistance across the load in a network with ideal voltage and current sources?

Select one:

- a. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are removed.
- b. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are turned off.
- c. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage source is replaced with short circuit while the current source is replaced with open circuit.
- d. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are replaced with short circuit.

Shown below is a network comprising one voltage source with an unknown value Vs and two unknown resistors R_1 and R_2. Also shown is the I-V characteristics measured at the port of the network. Finally, it is observed that resistors R_1 and R_2 in the network dissipate 4mW in total when the port is left as an open circuit. Use the I-V relations and the dissipated power to determine Vs, R_1 and R_2.



Select one:

- a. 6V, 3 k? and 6 k?
- b. 8V, 4 k? and 6 k?
- c. 8V, 4 k? and 8 k?
- d. 6V, 3 k? and 1.5 k?

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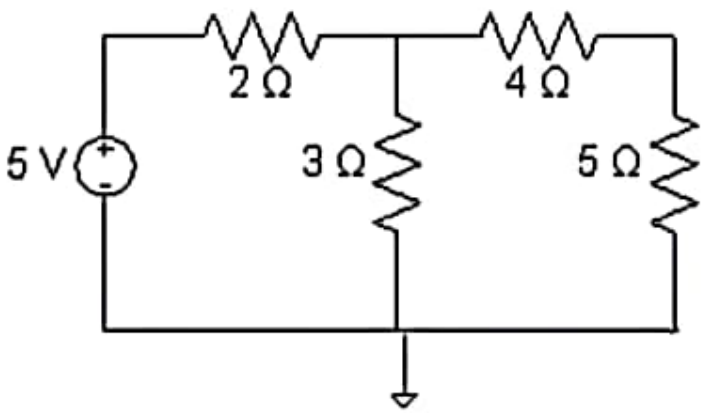
Question 21

Not yet answered

Marked out of 1.00

Flag question

Determine the current flowing in the 3 ohms resistor in the network shown below



Select one:

- a. $0.59\ A$
- b. $1.26\ A$
- c. $2.43\ A$
- d. $0.88\ A$

Question 22

Not yet answered

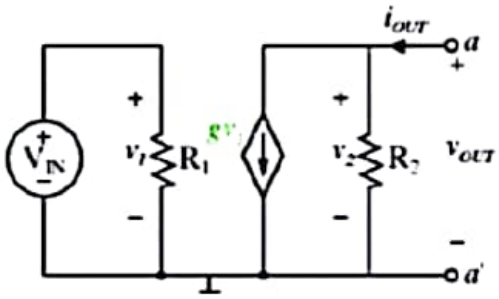
Marked out of 1.00

Flag question

Question 30

Not yet answered Marked out of 1.00 Flag question

The network below is setup in the Lab, if you were told to replace this with a Thevenin equivalent observed at the output port, what will be the expression for the Thevenin voltage?



Select one:

- a. $V_{TH} = -gV_{IN}R_1$
- b. $V_{TH} = -gV_{OUT}R_2$
- c. $V_{TH} = -gV_{IN}R_2$
- d. $V_{TH} = -gV_{OUT}R_1$

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Question 28

Not yet answered

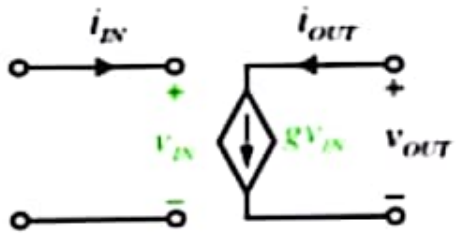
Marked out of 1.00

Flag question

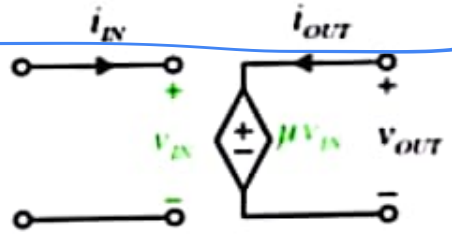
Identify a voltage controlled current source from the following

Select one:

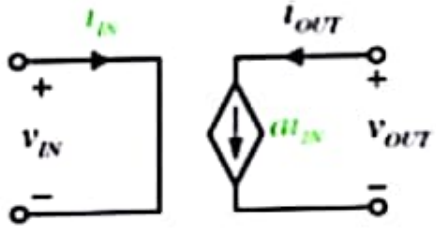
a.



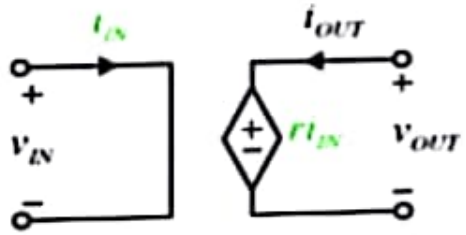
b.



c.



d.



Question 29

Not yet answered

Marked out of 1.00

Flag question

Kirchhoff's Current Law (KCL) obeys the

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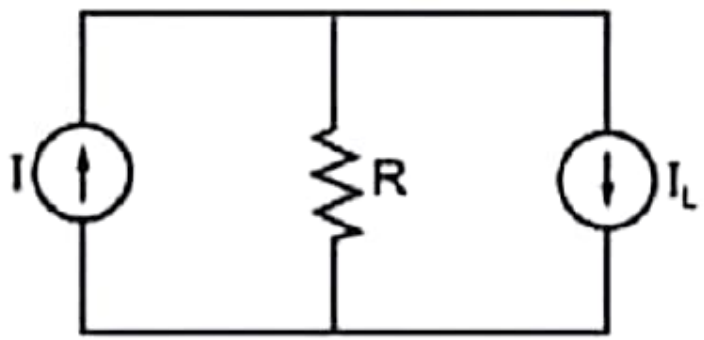
Marked out of 1.00 Flag question

Given that $I = 10\ A$, and $R = 10\ k\Omega$, determine the value of I_L that maximizes the power delivered to it.



Current Load

Select one:

- a. $I_L = 0.2\ mA$
- b. $I_L = 0.3\ mA$
- c. $I_L = 0.4\ mA$
- d. $I_L = 0.5\ mA$

Question 28

Not yet answered

Marked out of 1.00 Flag question

Identify a voltage controlled current source from the following

A supermesh is the characterized by connection of

Select one:

- a. Voltage source between two nodes
- b. Voltage source at the periphery of circuit
- c. Current source between two loops
- d. Dependent voltage source between two branches

Question 7

Not yet answered

Marked out of 1.00

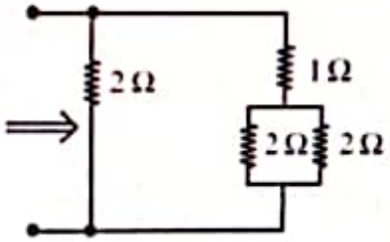
Flag question

In a circuit junction, three branch currents (I1=8A, I2=5A and I3=10A) converge. Calculate the total current flowing into the junction.

Select one:

- a. 23A
- b. 3A
- c. 10A
- d. 22A

Determine the equivalent resistance looking into the network shown below:



Select one:

- a. 4 Ω
- b. 3 Ω
- c. 2 Ω
- d. 1 Ω

Question 3

Not yet answered Marked out of 1.00 Flag question

Which of the following is true in the measurement of Thevenin resistance across the load in a netw
voltage and current sources?

Select one:

- a. Thevenin resistance is measured from the terminal of the open load, looking into the original
the voltage and current sources are removed

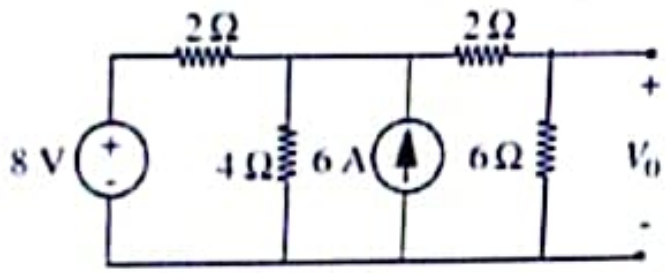
- c. 10 mA, $10^{4}\ \Omega$
- d. 10 mA, $10^{3}\ \Omega$

Question 3

Not yet answered Marked out of 1.00

Flag question

In the circuit shown below, the response V_0 due to the input current source is_____



Select one:

- a. 8.56 V
- b. 5.14 V
- c. 3.43 V
- d. 4.57 V

Question 4

Not yet answered Marked out of 1.00

Type here to search

c. 16.7V

d. 25V

Question 5 Not yet answered Marked out of 1.00

Flag question

The lumped matter discipline for lumped elements consist of the following constraints except:

Select one:

a. The boundaries are chosen such that the rate of change of magnetic flux linked with any closed loop outside the element must be zero for all time.

b. The elements must not include any net time-varying charge for all time.

c. The signal timescales of interest are much larger than the propagation delay of electromagnetic waves across the lumped elements.

d. The signal timescales of interest are much smaller than the propagation delay of electromagnetic waves across the lumped elements.

Type here to search

Question 14

Not yet answered Marked out of 1.00

Flag question

In a circuit with three resistors (R_1=100?, R_2=150? and R_3=200?) connected in parallel configuration which is then connected to a voltage source of 15Volts. Using Kirchhoff's laws, find the total current flow.

Select one:

- a. 0.25A
- b. 2.5A
- c. 0.251A
- d. 0.325A

Question 15

Not yet answered Marked out of 1.00

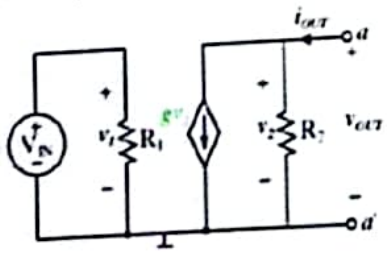
Flag question

Shown below is a network comprising one voltage source with an unknown value Vs and two unknown resistors R_1 and R_2. Also shown is the I-V characteristics measured at the port of the network. Finally, it is observed that resistors R_1 and R_2 in the network dissipate 4mW in total when the port is left as an open circuit. Use the I-V relations and the dissipated power

Type here to search

Question 21 Not yet answered Marked out of 1.00 Flag question

The network below is setup in the Lab, if you were told to replace this with a Thevenin equivalent observed at the output port, what will be the expression for the Thevenin voltage?



Select one:

- a. $V_{TH} = -gV_{IN}R_1$
- b. $V_{TH} = -gV_{OUT}R_2$
- c. $V_{TH} = -gV_{IN}R_2$
- d. $V_{TH} = -gV_{OUT}R_1$

Question 22 Not yet answered Marked out of 1.00 Flag question

32°C Haze Search

Question 11

Not yet answered

Marked out of 1.00

Flag question

In a circuit which has two resistors that are connected in parallel (R_1=120 and R ?) and is supplied by a voltage source of calculate the voltage drop across the resistor.

Select one:

- a. 0.42A
- b. 0.168A
- c. 0.001A
- d. 0.0048A

Question 12

Not yet answered

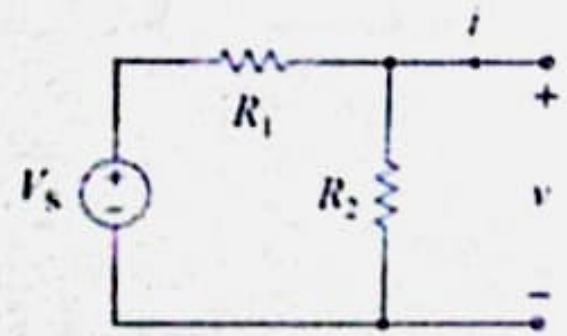
Marked out of 1.00

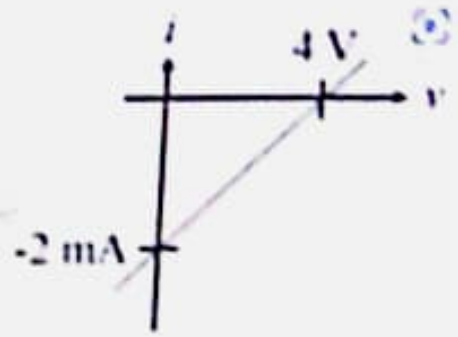
Flag question

In superposition theorem, in order to determine the response due to one current

https://testonline.unilag.edu.ng/mod/quiz/attempt.php?attempt=54109&cmid=39

Shown below is a network comprising one voltage source with an unknown value Vs and two unknown resistors R_1 and R_2. Also shown is the I-V characteristics measured at the port of the network. Finally, it is observed that resistors R_1 and R_2 in the network dissipate 4mW in total when the port is left as an open circuit. Use the I-V relations and the dissipated power to determine Vs, R_1 and R_2.





Select one:

- a. 6V, 3 kΩ and 6 kΩ
- b. 8V, 4 kΩ and 6 kΩ
- c. 8V, 4 kΩ and 8 kΩ
- d. 6V, 3 kΩ and 1.5 kΩ

Next page

◄ Any comments

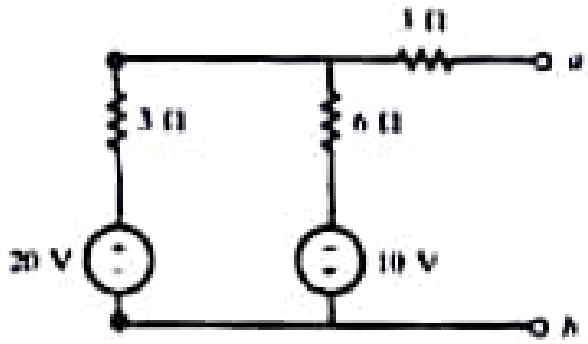
Jump to

Type here to search

Question 20 Not yet answered Marked out of 1.00

Flag question

The figure shown is the experimental setup for the validation of Thevenin's theorem. Based on measured data, the Thevenin equivalent circuit was seen to be the same as the series connected 11.2V voltage source and 5.8 ? resistor. Compare the readings with the computed values.



Select one:

- a. 10.0V, 5.0 ?
- b. 11.2V, 5.8 ?
- c. 10.8V, 5.0 ?
- d. 11.0V, 5.8 ?

Next page

32°C

b. $V_{TH} = -gV_{OUT}R_2$

c. $V_{TH} = -gV_{IN}R_2$

d. $V_{TH} = -gV_{OUT}R_1$

Question 17

Not yet answered Marked out of 1.00

Flag question

In a circuit which has two resistors that are connected in parallel (R_1=120? and R_2=180?) and is supplied by a voltage source of 30V, calculate the voltage drop across the 180? resistor.

Select one:

a. 0.42A

b. 0.168A

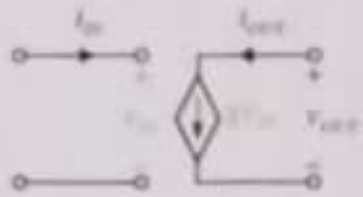
c. 0.001A

d. 0.0048A

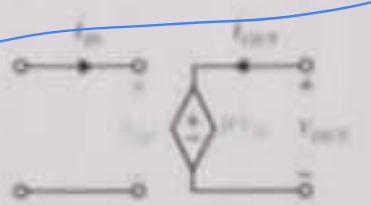
Identify a voltage controlled current source from the following

Select one:

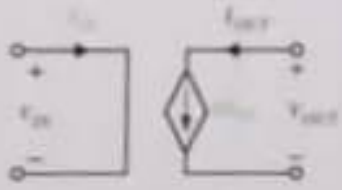
a.



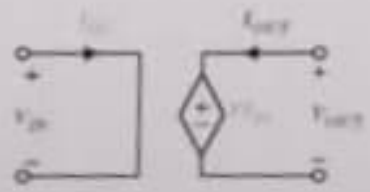
b.



c.



d.



- a. $0.53\ W$
- b. $1.25\ W$
- c. $2.45\ W$
- d. $0.43\ W$

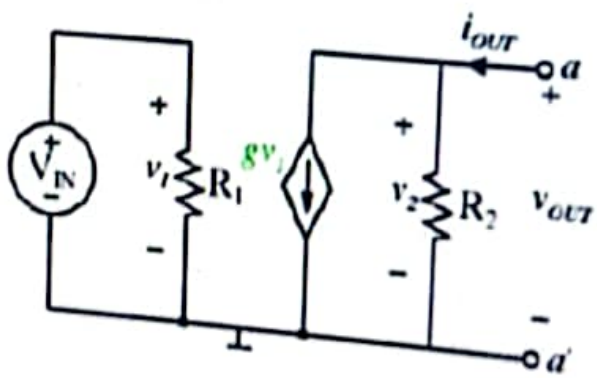
Question 10

Not yet answered

Marked out of 1.00

Flag question

The network below is setup in the Lab, if you were told to replace this with a Thevenin equivalent observed at the output port, what will be the expression for the Thevenin voltage?



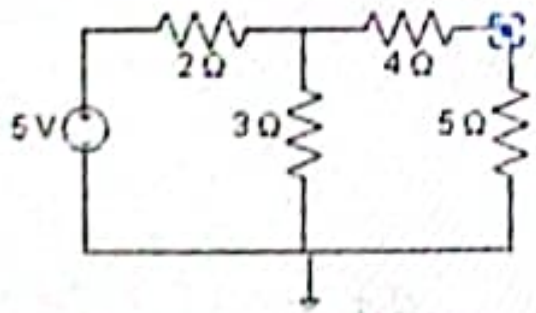
Select one:

- a. $V_{TH} = -gV_{IN}R_1$
- b. $V_{TH} = -gV_{OUT}R_2$
- c. $V_{TH} = -gV_{IN}R_2$
- d. $V_{TH} = -gV_{OUT}R_1$

Question 20 Not yet answered Marked out of 1.00

Flag question

Determine the current flowing in the 3 ohms resistor in the network shown below



Select one:

- a. 0.59 A
- b. 1.26 A
- c. 2.43 A
- d. 0.88 A

Next page

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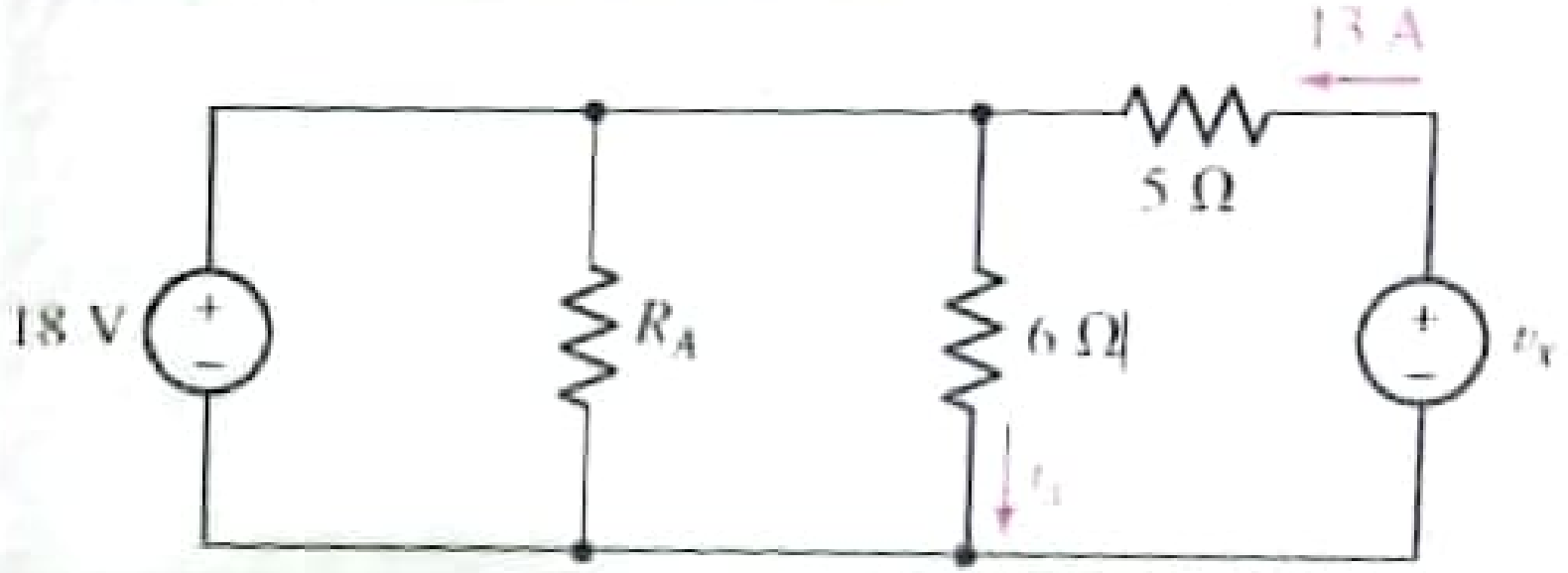
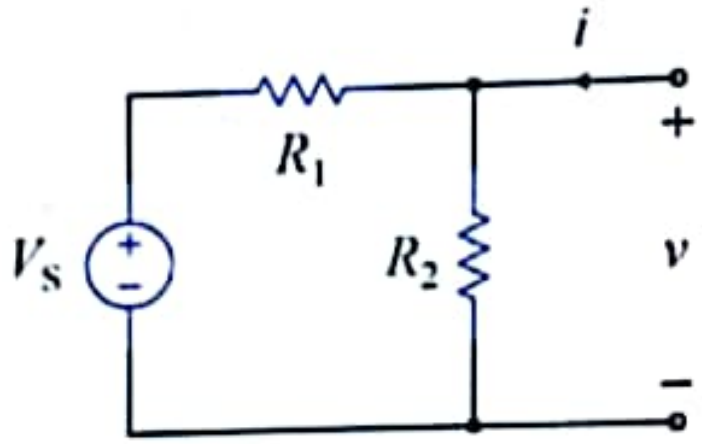
Type here to search

If the 6 ? resistor draws a current of 3 A and the 18 V source delivers a current of 8 A in the above circuit, determine Vx



Shown below is a network comprising one voltage source with an unknown value Vs and two unknown resistors R_1 and R_2. Also shown is the I-V characteristics measured at the port of the network. Finally, it is observed that resistors R_1 and R_2 in the network dissipate 4mW in total when the port is left as an open circuit. Use the I-V relations and the dissipated power to determine Vs, R_1 and R_2.



Select one:

- a. 6V, 3 k? and 6 k?
- b. 8V, 4 k? and 6 k?
- c. 8V, 4 k? and 8 k?
- d. 6V, 3 k? and 1.5 k?

Question 27 Not yet answered

Marked out of 1.00 Flag question

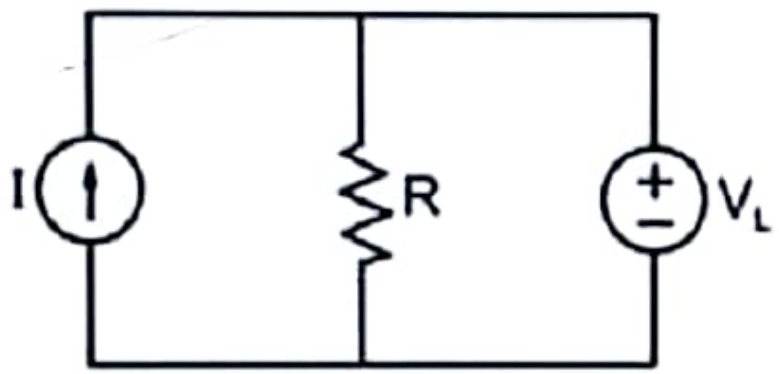
c. 16.7V

d. 25V

Question 29 Not yet answered

Marked out of 1.00 Flag question

Given that $I = 10\ mA$, and $R = 10\ k\Omega$, determine the value of V_L that maximizes the power delivered to it.



Voltage Load

Select one:

- a. $V_L = 50\ V$
- b. $V_L = 100\ V$
- c. $V_L = 150\ V$
- d. $V_L = 200\ V$

Question 30 Not yet answered

25 PM
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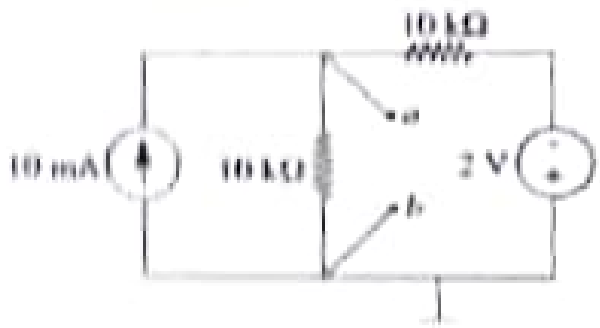
Question 21

Not yet answered

Marked out of 1.00

Flag question

Determine V_{th} and R_{th} across the terminal ab in the network shown below:



Select one:

- a. $V_{th} = 49\,V$ and $R_{th} = 5\,k\Omega$
- b. $V_{th} = 50\,V$ and $R_{th} = 5\,k\Omega$
- c. $V_{th} = 51\,V$ and $R_{th} = 5\,k\Omega$
- d. $V_{th} = -49\,V$ and $R_{th} = 5\,k\Omega$

Question 22

Not yet answered

Marked out of 1.00

Flag question

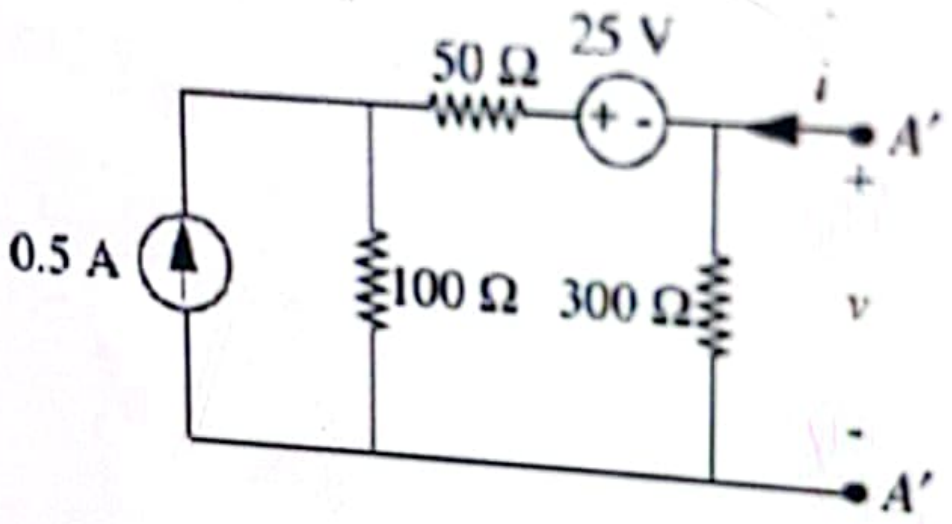
Question 5

Not yet answered

Marked out of 1.00

Flag question

Determine the Norton equivalent V_N and R_N across the terminal $A^1 A^1$ in the network shown below:



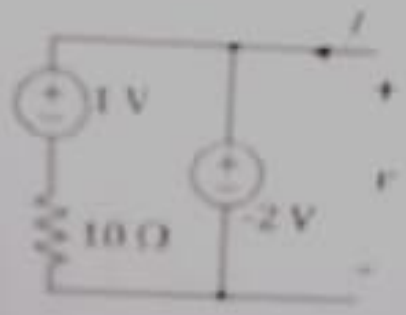
Select one:

- a. $I_N = 1.896\ A$ and $R_N = 77.78\ \Omega$
- b. $I_N = 0.1667\ A$ and $R_N = 77.78\ \Omega$
- c. $I_N = 0.1667\ A$ and $R_N = 100\ \Omega$
- d. $I_N = -0.567\ A$ and $R_N = 90\ \Omega$

Announcements

Next page

Given the circuit below to analyse in the Lab, the I-V characteristics will be of the form:



Select one:

○ a.

○ b.

32°C

c. 3.43 V

d. 4.57 V

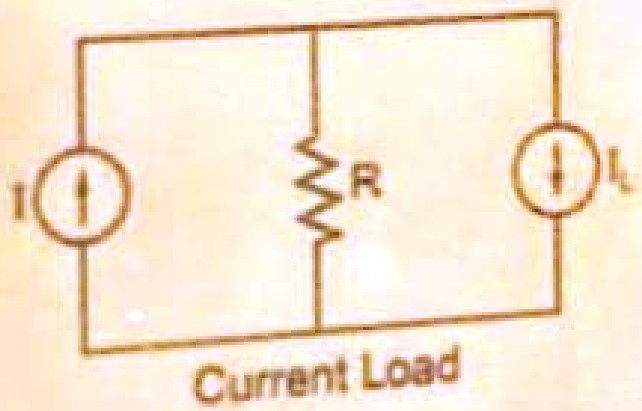
Question 2

Not yet answered

Marked out of 1.00

Flag question

Given that $I = 10\ A$, and $R = 10\ k\Omega$, determine the value of I_L that maximizes the power delivered to it.



Select one:

a. $I_L = 0.2\ mA$

b. $I_L = 0.3\ mA$

c. $I_L = 0.4\ mA$

d. $I_L = 0.5\ mA$

Question 3

Not yet answered

Marked out of 1.00

Flag question

Question 24

Not yet answered Marked out of 1.00

Flag question

In a circuit which has two resistors that are connected in parallel (R_1 = 120? and R_2=180?) and is supplied by a voltage source of 30V, calculate the voltage drop across the 180? resistor.

Select one:

- a. 0.42A
- b. 0.168A
- c. 0.001A
- d. 0.0048A

Question 25

Not yet answered Marked out of 1.00

Flag question

Shown below is a network comprising one voltage source with an unknown

32°C
Haze

Question 30

Not yet answered

Marked out of 1.00

Flag question

In a closed loop with two resistors connected in series whereby R_1 is twice the value of R_2. Calculate the voltage drop across R_1 if the voltage in the circuit is 50V.

Select one:

- a. 33.3V
- b. 50V
- c. 16.7V
- d. 25V

Finish attempt ...

Announcements

Jump to...

Quiz navigation

Determine the branch current i_A, i_B and i_C

Select one:

- a. 3A, -5.4A, 6A
- b. 3A, -4.4A, 5A
- c. 2.8A, -4.5A, 6A
- d. 2.8A, -5A, 5.8 A

Question 4

Not yet answered

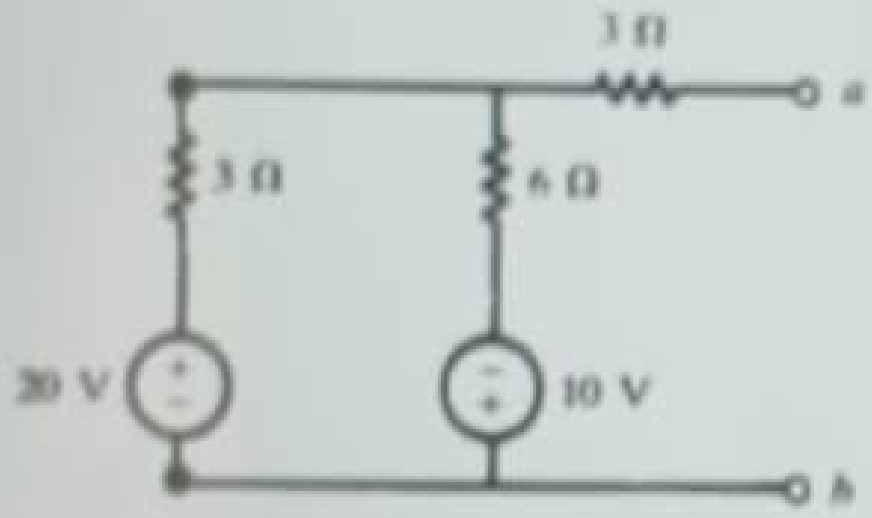
Marked out of 1.00

Flag question

In a circuit which has two resistors that are connected in parallel (R_1=120? and R_2=180?) and is supplied by a voltage source of 30V, calculate the voltage drop across the 180? resistor.

Select one:

The figure shown is the experimental setup for the validation of Thevenin's theorem. Based on measured data, the Thevenin equivalent circuit was seen to be the same as the series connected 11.2V voltage source and 5.8 ? resistor. Compare the readings with the computed values.



Select one:

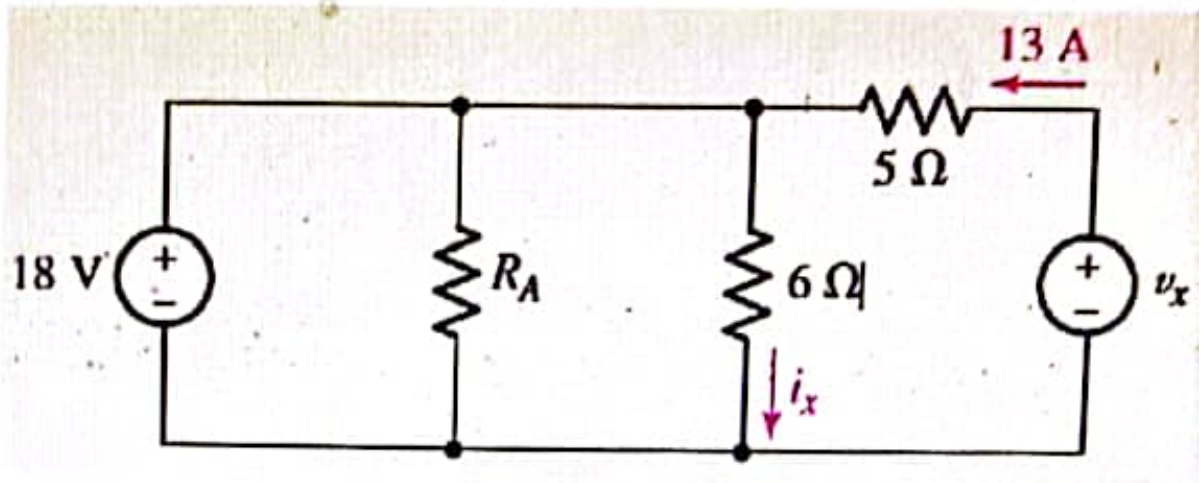
- a. 10.0V; 5.0 ?
- b. 11.2V; 5.8 ?
- c. 10.8V; 5.0 ?
- d. 11.0V; 5.8 ?

Question 12 Not yet answered

Question 4

Not yet answered Marked out of 1.00

If the 6 ? resistor draws a current of 3 A and the 18 V source
of 8 A in the above circuit, determine Vx



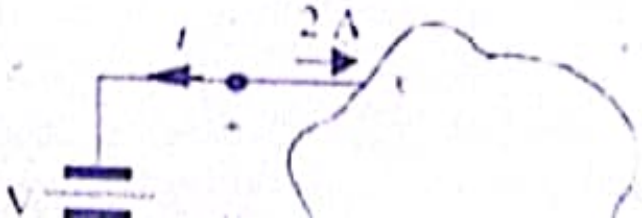
Select one:

- a. 83V
- b. 85V
- c. 84.5V
- d. 82.3V

Question 5

Not yet answered Marked out of 1.00

Consider the circuits shown in the figure below. Determine the t
variables v and i, use the terminal variables to v and i to determi
specify whether the power in is stored or delivered by the batter

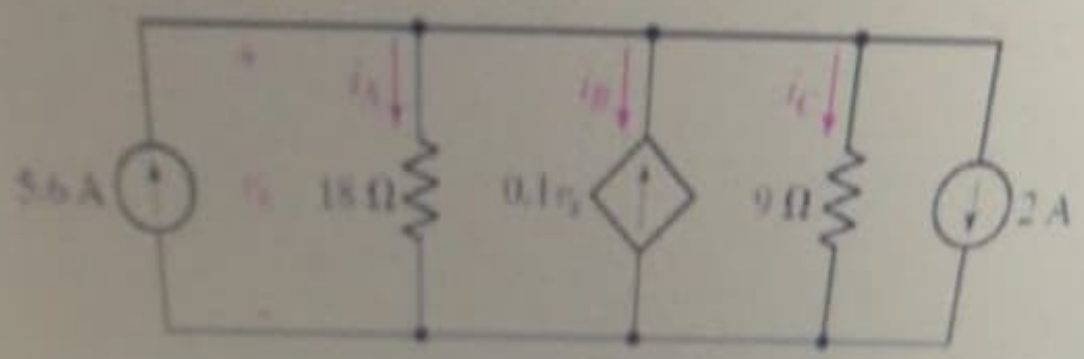


d. 3 ohms

Question 3

Not yet answered Marked out of 1.00

Determine the branch current i_A, i_B and i_C



Select one:

- a. 3A, -5.4A, 6A
- b. 3A, -4.8A, 5A
- c. 2.8A, -4.5A, 6A
- d. 2.8A, -5A, 5.8 A

Question 4 Not yet answered Marked out of 1.00 Flag question

Question 5

Not yet answered Marked out of 1.00 Flag question

Given that $I = 10\ A$ and $R = 10\ k\Omega$ determine the value of I_L that maximizes the power delivered to I

Current Load

Select one:

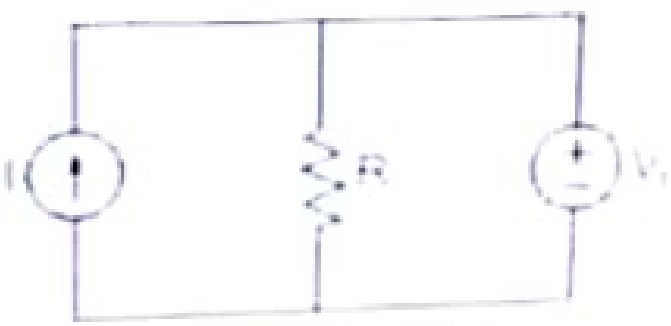
- $I_L = 0.2\ mA$
- $I_L = 0.3\ mA$
- $I_L = 0.4\ mA$
- $I_L = 0.5\ mA$

Next page

Question 2

Not yet answered Marked out of 1.00 Flag question

Given that $I = 10\ mA$ and $R = 10\ k\Omega$ determine the value of V_2 that maximizes the power delivered to it

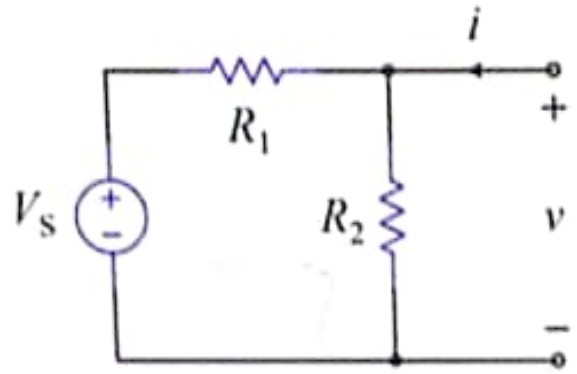


Voltage Load

Select one:

- $V_2 = 50\ V$
- $V_2 = 100\ V$
- $V_2 = 150\ V$
- $V_2 = 200\ V$

Shown below is a network comprising one voltage source with an unknown value Vs and two unknown resistors R_1 and R_2. Also shown is the I-V characteristics measured at the port of the network. Finally, it is observed that resistors R_1 and R_2 in the network dissipate 4mW in total when the port is left as an open circuit. Use the I-V relations and the dissipated power to determine Vs, R_1 and R_2.



-2 mA

Select one:

- a. 6V, 3 k? and 6 k?
- b. 8V, 4 k? and 6 k?
- c. 8V, 4 k? and 8 k?
- d. 6V, 3 k? and 1.5 k?

Question 13 Not yet answered

Marked out of 1.00 Flag question

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thon for Data Sci...

ne > My courses > EEG211 > 20 December - 26 December > EEG211_QUIZ1_B

Question 6

Not yet answered Marked out of 1.00 Flag question

In a circuit which has two resistors that are connected in parallel (R_1=120? and R_2=180?) and is supplied by a voltage source of 30V, calculate the voltage drop across the 180? resistor.

Select one:

- a. 0.42A
- b. 0.168A
- c. 0.001A
- d. 0.0048A

Question 7 Flag question

testonline.uniag.edu.ng/mod/quiz/attempt.php?attempt=543206&cmid=3905&page=1

New Tab Python for Data Sc...

Question 7

Not yet answered Marked out of 1.00 Flag question

A generator transfers maximum power to a load when:

Select one:

- a. Load resistance is equal to zero
- b. Load resistance is greater than generator internal resistance
- c. Load resistance is less than the generator internal resistance
- d. Load resistance equal to generator internal resistance

Question 8

Not yet answered Marked out of 1.00 Flag question

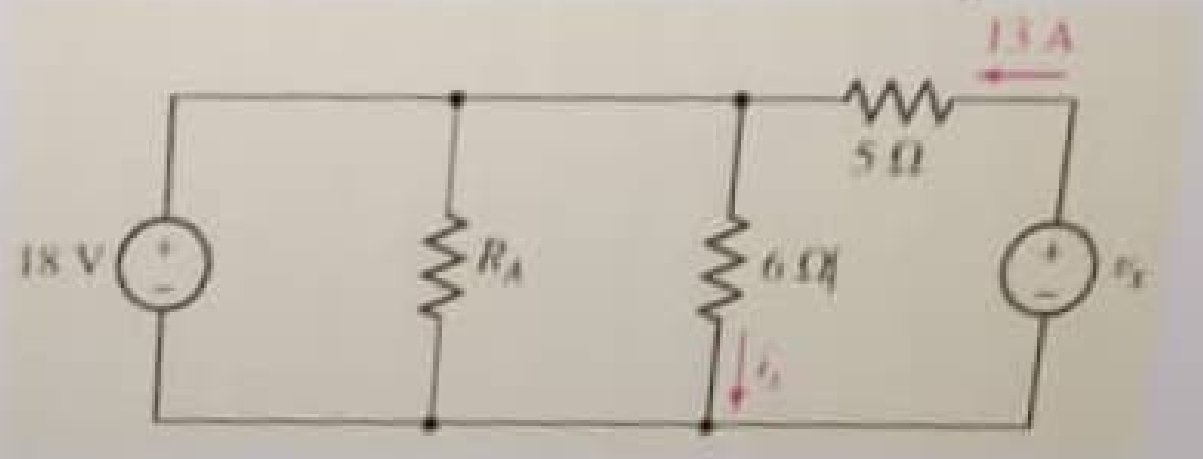
The network below is setup in the Lab. If you were told to replace this with a Thevenin equivalent observed at the output port, what will be the expression for the Thevenin voltage?

Question 21

Not yet answered Marked out of 1.00

Flag question

If the 6 ? resistor draws a current of 3 A and the 18 V source delivers a current of 8 A in the above circuit, determine R_A



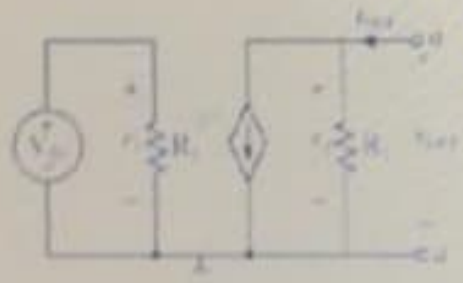
Select one:

- a. 2 ohms
- b. 2.4 ohms
- c. 1 ohms
- d. 3 ohms

Question 8

Not yet answered Marked out of 1.00 Flag question

The network below is setup in the Lab, if you were told to replace this with a Thevenin equivalent observed at the output port, what will be the expression for the Thevenin voltage?



Select one:

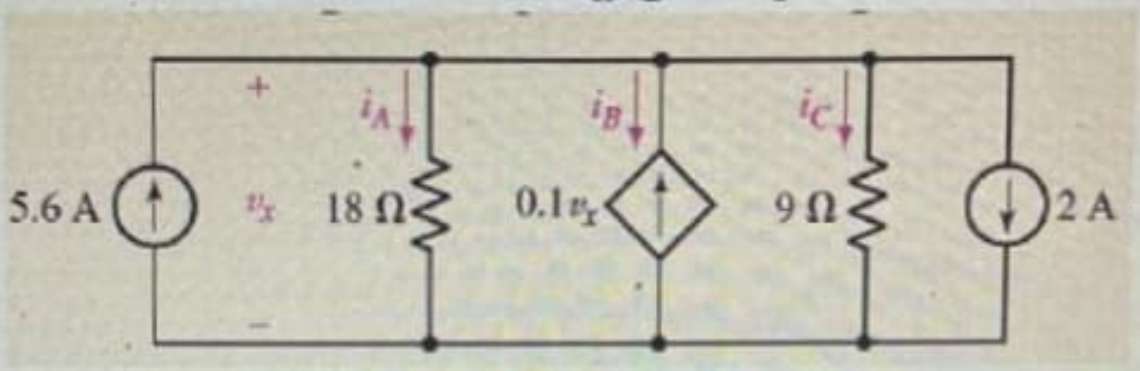
- a. $V_{TH} = -gV_{in}R_1$
- b. $V_{TH} = -gV_{OUT}R_2$
- c. $V_{TH} = -gV_{in}R_2$
- d. $V_{TH} = -gV_{OUT}R_1$

Question 12

Not yet answered Marked out of 1.00

Flag question

Determine the branch current i_A, i_B and i_C



Select one:

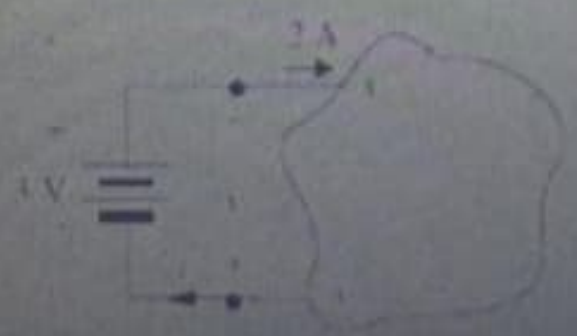
- a. 3A, -5.4A, 6A
- b. 3A, -4.4A, 5A
- c. 2.8A, -4.5A, 6A
- d. 2.8A, -5A, 5.8 A

Question 13

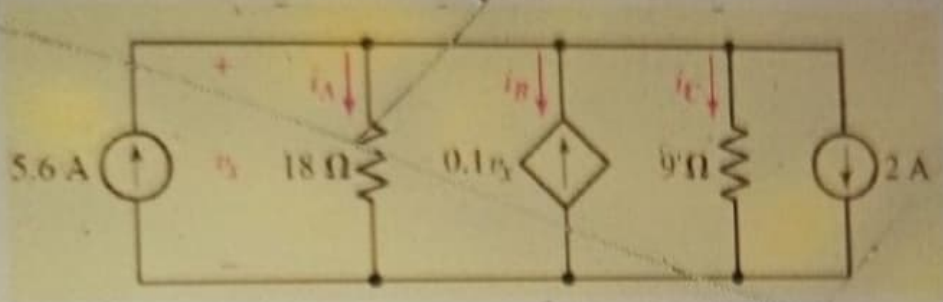
Not yet answered Marked out of 1.00

Flag question

Consider the circuits shown in the figure below. Determine the termina
variables v and i, use the terminal variables to v and i to determine the
specify whether the power in is stored or delivered by the battery.



Determine the branch current i_A, i_B and i_C



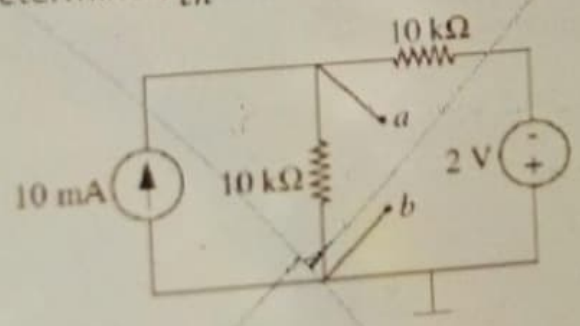
Select one:

- a. 3A, -5.4A, 6A
- b. 3A, -4.4A, 5A
- c. 2.8A, -4.5A, 6A
- d. 2.8A, -5A, 5.8 A

Question 5

Not yet answered Marked out of 1.00 Flag question

Determine V_{th} and R_{th} across the terminal ab in the network shown below:



Select one:

- a. $V_{th} = 49\,V$ and $R_{th} = 5\,k\Omega$
- b. $V_{th} = 50\,V$ and $R_{th} = 5\,k\Omega$
- c. $V_{th} = 51\,V$ and $R_{th} = 5\,k\Omega$
- d. $V_{th} = -49\,V$ and $R_{th} = 5\,k\Omega$

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c. Linearity

d. Non-linearity

Question 3 Not yet answered Marked out of 1.00 Flag question

In a circuit junction, three branch currents (I1=8A, I2=5A and I3=10A) converge. Calculate the total current flowing into the junction.

Select one:

a. 23A

b. 3A

c. 10A

d. 32A

Question 4 Not yet answered Marked out of 1.00 Flag question

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c. 11.0 ?; 81.82W

d. 12.5 ?; 72.00W

Question 25 Not yet answered Marked out of 1.00

Flag question

In a circuit junction, three branch currents (I1=8A, I2=5A and I3=10A) converge. Calculate the total current flowing into the junction.

Select one:

a. 23A

b. 3A

c. 10A

d. 32A

Next page

Announcements

Jump to...

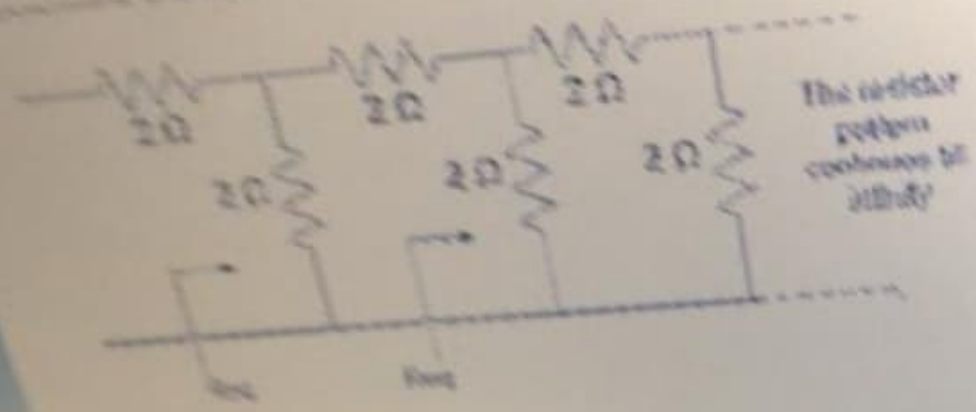
Question 9 Not yet answered Marked out of 1.00 Flag question

The lumped matter discipline for lumped elements consist of the following constraints except:

Select one:

- a. The boundaries are chosen such that the rate of change of magnetic flux linked with any closed loop outside the element must be zero for all time.
- b. The elements must not include any net time-varying charge for all time.
- c. The signal timescales of interest are much larger than the propagation delay of electromagnetic waves across the lumped elements.
- d. The signal timescales of interest are much smaller than the propagation delay of electromagnetic waves across the lumped elements.

Question 10 Not yet answered Marked out of 1.00 Flag question



The circuit problem continues to infinity

Select one:

- a. 3.33 Ω
- b. 3.25 Ω
- c. 2.414 Ω
- d. 1 Ω

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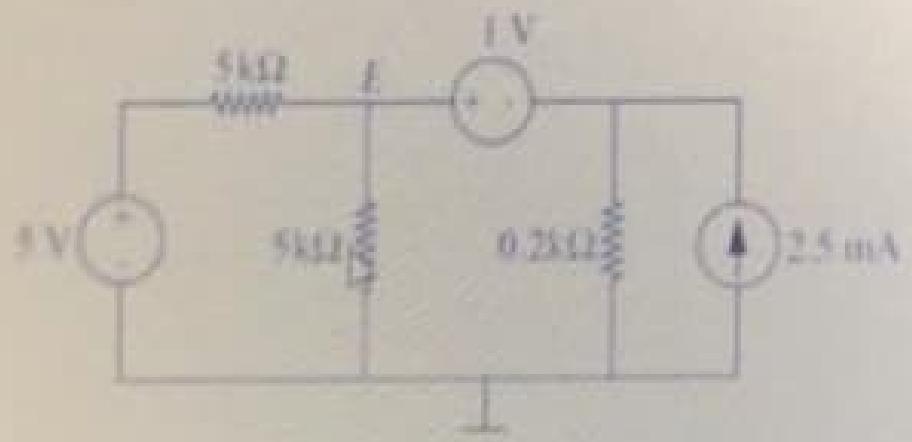
New Tab Python for Data Sci...

Question 12

Not yet answered Marked out of 1.00

Determine the node voltage E in the network shown below



Select one:

- a. 2.24 V
- b. 1.45 V
- c. 1.57 V
- d. 2.54 V

Question 13

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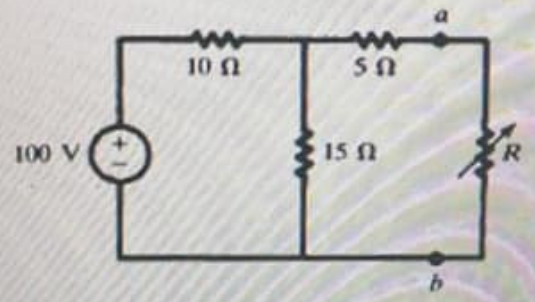
Question 17

Not yet answered Marked out of 1.00 Flag question

Given the experimental setup shown, the measured resistance that resulted in maximum power transfe the terminals ***ab*** of the circuit was 11.5 ?. Deduce the computed values of R that will result in maximum transfer and the maximum power transferred.



Select one:

- a. 11.5 ?; 78.26W
- b. 12.0 ?; 75.00W
- c. 11.0 ?; 81.82W
- d. 12.5 ?; 72.00W

Question 18

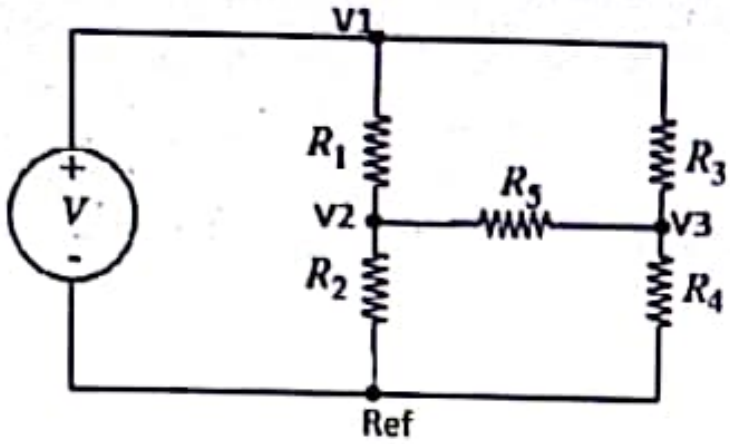
Not yet answered Marked out of 1.00 Flag question

Kirchhoff's Voltage Law (KVL) obeys the conservation of _____?

Select one:

- a. Mass

The conductance matrix for the network shown below can be written by inspection as:



Select one:

a. $\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3} & 0 & -\frac{1}{R_3} \\ 0 & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$

b. $\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_1} & -\frac{1}{R_3} \\ -\frac{1}{R_1} & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$

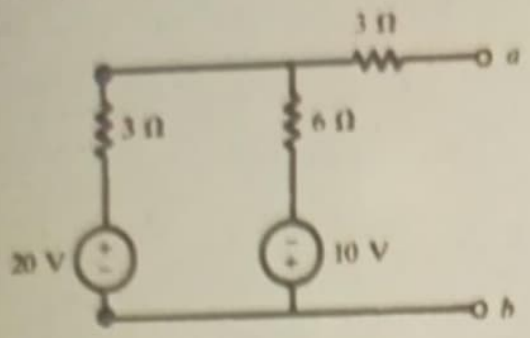
c. $\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3} & -\frac{1}{R_1} & -\frac{1}{R_3} \\ -\frac{1}{R_1} & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$

d. $\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3} & -\frac{1}{R_5} & -\frac{1}{R_2} \\ -\frac{1}{R_5} & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_2} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$

Next pag

Announcements Jump to

The figure shown is the experimental setup for the validation of Thevenin's theorem. Based on measured data, the Thevenin equivalent circuit was seen to be the same as the series connected 11.2V voltage source and 5.8 ? resistor. Compare the readings with the computed values.



Select one:

- a. 10.0V; 5.0 ?
- b. 11.2V; 5.8 ?
- c. 10.8V; 5.0 ?
- d. 11.0V; 5.8 ?

Question 7

Not yet answered Marked out of 1.00 Flag question

A supermesh is the characterized by connection of

Select one:

- a. Voltage source between two nodes
- b. Voltage source at the periphery of circuit
- c. Current source between two loops
- d. Dependent voltage source between two branches

Question 17

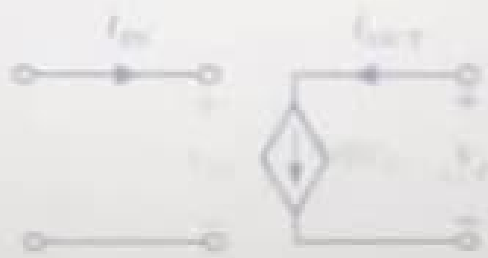
Not yet answered

Marked out of 1.00

Identify a voltage controlled current source from the following

Select one:

a.



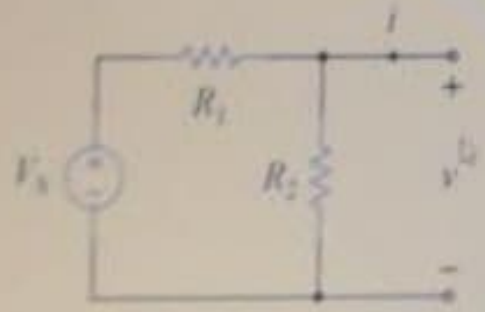
b.

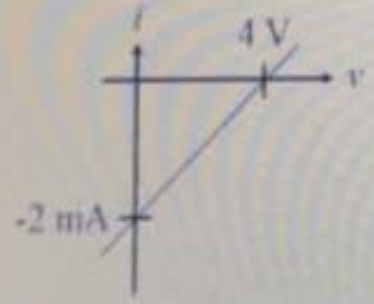
c.

d.

Question 18

Shown below is a network comprising one voltage source with an unknown value vs and two unknown resistors R_1 and R_2. Also shown is the I-V characteristics measured at the port of the network. Finally, it is observed that resistors R_1 and R_2 in the network dissipate 4mW in total when the port is left as an open circuit. Use the I-V relations and the dissipated power to determine Vs, R_1 and R_2.





Select one:

- a. 6V, 3 kΩ and 6 kΩ
- b. 8V, 4 kΩ and 6 kΩ
- c. 8V, 4 kΩ and 8 kΩ
- d. 6V, 1 kΩ and 1.5 kΩ

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Marked out of 1.00

Flag question

The

mped elements consist of the following constraints

Memory usage: 154 MB

Select one:

a. The boundaries are chosen such that the rate of change of magnetic flux linked with any closed loop outside the element must be zero for all time.

b. The elements must not include any net time-varying charge for all time.

c. The signal timescales of interest are much larger than the propagation delay of electromagnetic waves across the lumped elements.

d. The signal timescales of interest are much smaller than the propagation delay of electromagnetic waves across the lumped elements.

Question 20

Not yet answered

Marked out of 1.00

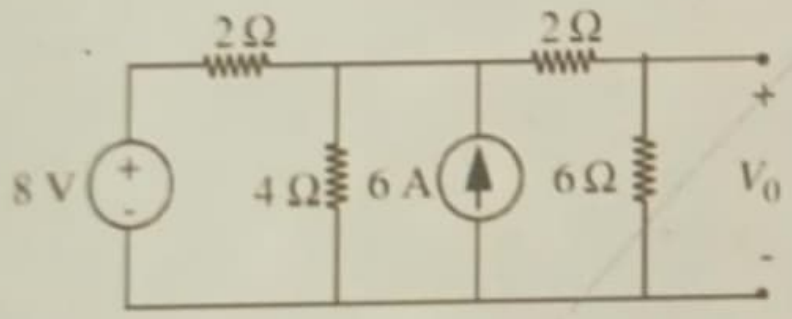
Flag question

Consider the circuits shown in the figure below. Determine the terminal variables v and i.

Question 10

Not yet answered Marked out of 1.00 Flag question

In the circuit shown below, the response V_0 due to the input current source is_____



Select one:

- a. 8.56 V
- b. 5.14 V
- c. 3.43 V
- d. 4.57 V

Question 22

Not yet answered Marked out of 1.00 Flag question

The property of a system in which, when an input is multiplied by a constant it results to the output multiplied by the same constant is called_____

Select one:

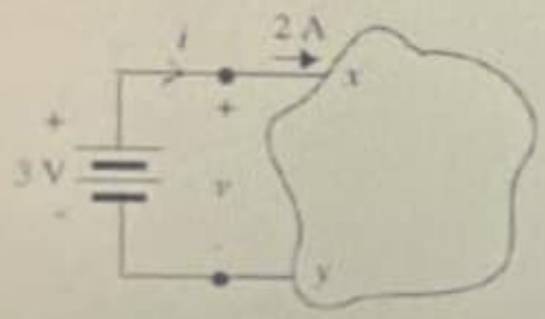
- a. Homogeneity
- b. Superposition
- c. Linearity
- d. Non-linearity

d. 82.3V

Question 3

Not yet answered Marked out of 1.00 Flag question

Consider the circuits shown in the figure below. Determine the terminal variables v and i, use the terminal variables to v and i to determine the power, specify whether the power in is stored or delivered by the battery.



Select one:

a. $v = 3V, i = -2A, p = -6W, -$power implies 6 W is delivered by the battery

b. $v = -3V, i = -2A, p = 6W, +$power implies 6 W is stored in the battery

c. $v = -3V, i = -2A, p = -6W, -$power implies 6 W is delivered by the battery

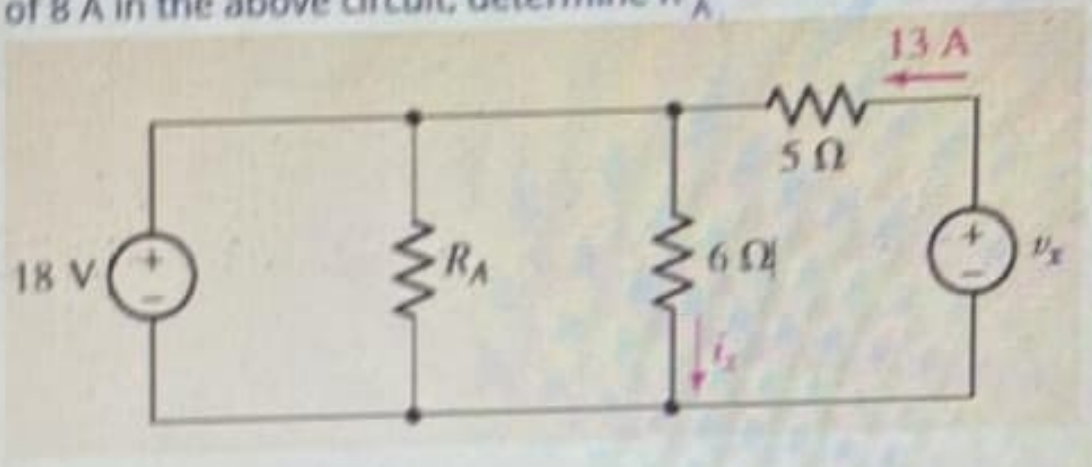
d. $v = 3V, i = 2A, p = 6W, +$power implies 6 W is stored in the battery

Question 28

Not yet answered Marked out of 1.00

Flag question

If the 6 ? resistor draws a current of 3 A and the 18 V source delivers a cu
of 8 A in the above circuit, determine R_A



Select one:

- a. 2 ohms
- b. 2.4 ohms
- c. 1 ohms
- d. 3 ohms

Question 29

Not yet answered Marked out of 1.00

Flag question

A planar graph has 6 branches and 3 meshes. Then the number of nodes i

Select one:

- a. 6
- b. 4
- c. 5

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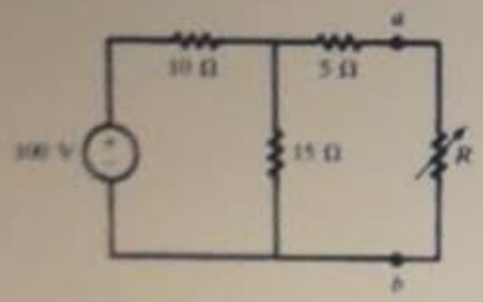
Given the experimental setup shown, the measured resistance that resulted in maximum power transfer across the terminals ***ab*** of the circuit was 11.5 ?. Deduce the computed values of R that will result in maximum power transfer and the maximum power transferred.



Select one:

- a. 11.5 ?; 78.26W
- b. 12.0 ?; 75.00W
- c. 11.0 ?; 81.82W
- d. 12.5 ?; 72.00W

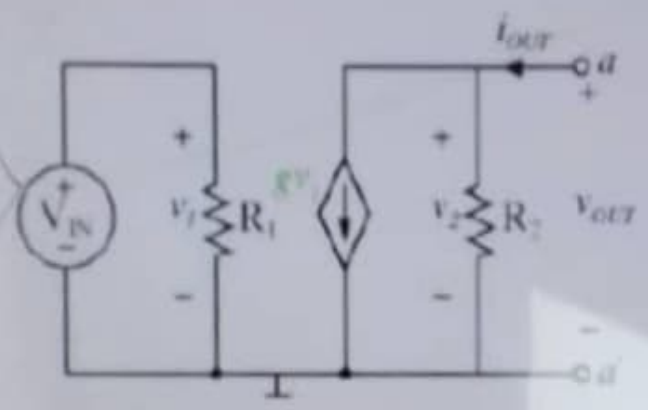
Question 2

Not yet answered

Marked out of 1.00

Flag question

The network below is setup in the Lab, if you were told to replace this with a Thevenin equivalent observed at the output port, what will be the expression for the Thevenin voltage?



Select one:

- a. $V_{TH} = -gV_{IN}R_1$
- b. $V_{TH} = -gV_{OUT}R_2$
- c. $V_{TH} = -gV_{IN}R_2$
- d. $V_{TH} = -gV_{OUT}R_1$

Question 3

Not yet answered

Marked out of 1.00

Flag question

The lumped matter discipline for lumped elements consist of the following constraints except:

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Python for Data Sci...

Question 22

Not yet answered Marked out of 1.00 Flag quest

A planar graph has 6 branches and 3 meshes. Then the number of nodes is

Select one:

- a. 6
- b. 4
- c. 3
- d. 2

Question 23

Not yet answered Marked out of 1.00 Flag que

Which of the following is true in the measurement of Thevenin resistance a
a network with ideal voltage and current sources?

Select one:

The lumped matter discipline for lumped elements consist of the following constraints except:

Select one:

- a. The boundaries are chosen such that the rate of change of magnetic flux linked with any closed loop outside the element must be zero for all time.
- b. The elements must not include any net time-varying charge for all time.
- c. The signal timescales of interest are much larger than the propagation delay of electromagnetic waves across the lumped elements.
- d. The signal timescales of interest are much smaller than the propagation delay of electromagnetic waves across the lumped elements.

Question 4 Not yet answered

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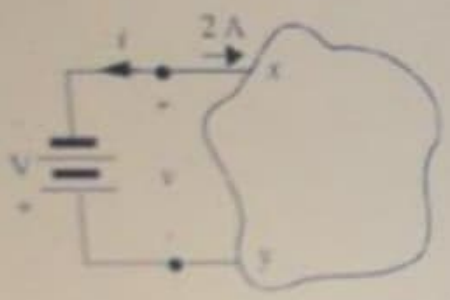
Python for Data Sci...

Consider the circuits shown in the figure below. Determine the terminal variables v and i, use the terminal variables to v and i to determine the power, specify whether the power in is stored or delivered by the battery.



a. $v = 3V, i = -2\,A, p = -6\,W$, −power implies 6 W is delivered by the battery

b. $v = -3V, i = -2\,A, p = 6\,W$, +power implies 6 W is stored in the battery

c. $v = -3V, i = -2\,A, p = -6W$, − power implies 6 W is delivered by the battery

d. $v = 3V, i = 2\,A, p = 6W$, +power implies 6 W is stored in the battery

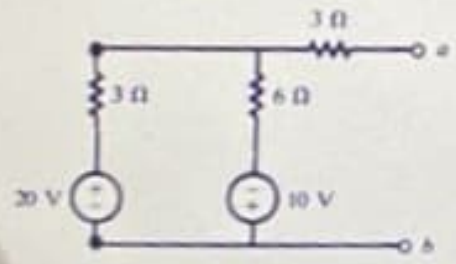
c. Ideal voltage source is one whose internal conductance is zero

d. Ideal voltage source is one whose internal resistance is zero

Question 25

Not yet answered Marked out of 1.00 Flag question

The figure shown is the experimental setup for the validation of Thevenin's theorem. Based on measured data, the Thevenin equivalent circuit was seen to be the same as the series connected 11.2V voltage source and 5.8 ? resistor. Compare the readings with the computed values.



Select one:

a. 10.0V; 5.0 ?

b. 11.2V; 5.8 ?

c. 10.8V; 5.0 ?

d. 11.0V; 5.8 ?

Next page

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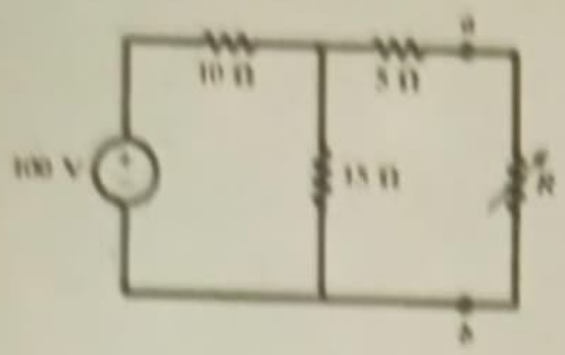
Given the experimental setup shown, the measured resistance that resulted in maximum power transfer across the terminals ***ab*** of the circuit was 11.5 ?. Deduce the computed values of R that will result in maximum power transfer and the maximum power transferred.



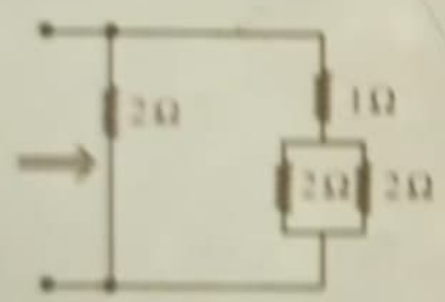
Select one:

- a. 11.5 ?; 78.26W
- b. 12.0 ?; 75.00W
- c. 11.0 ?; 81.82W
- d. 12.5 ?; 72.00W

Question 14

Not yet answered Marked out of 1.00 Flag question

Determine the equivalent resistance looking into the network shown below:



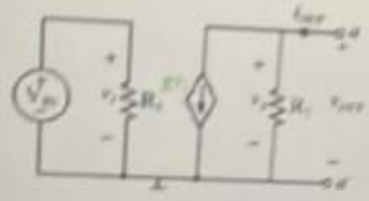
Select one:

- a. 4 Ω
- b. 3 Ω
- c. 2 Ω

Question 17

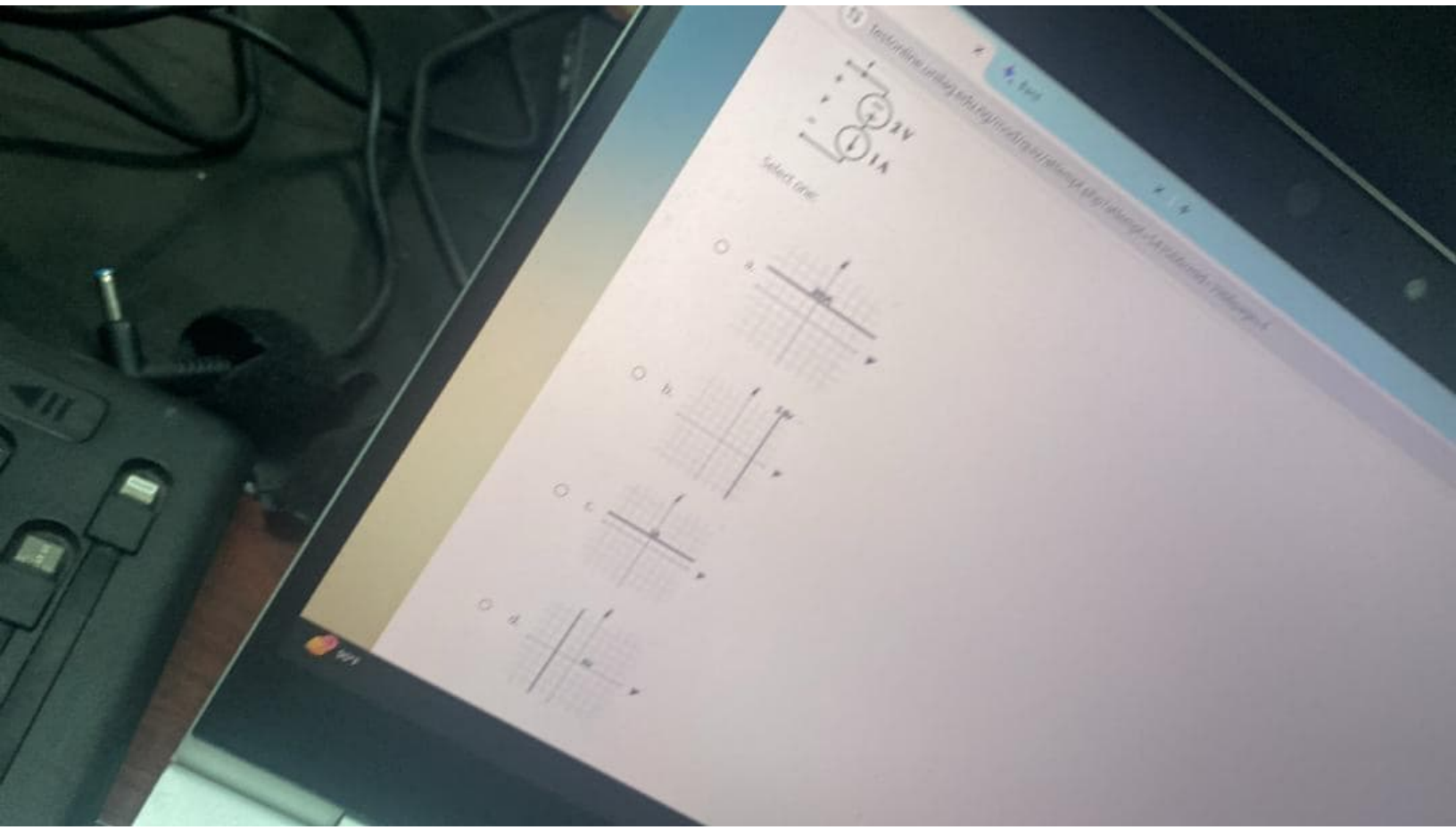
Not yet answered Marked out of 1.00 Flag question

The network below is setup in the Lab. If you were told to replace this with a Thevenin equivalent observed at the output port, what will be the expression for the Thevenin voltage?



Select one:

- a. $V_{TH} = -gV_{in}R_1$
- b. $V_{TH} = -gV_{out}R_1$
- c. $V_{TH} = -gV_{in}R_2$
- d. $V_{TH} = -gV_{out}R_2$


2 V
1 A
Select one:
a.
b.
c.
d.

c. 10A

d. 32A

Question 28 Not yet answered Marked out of 1.00 Flag question

In a circuit with three resistors (R_1=100?, R_2=150? and R_3=200?) connected in parallel configuration which is then connected to a voltage source of 15Volts. Using Kirchhoff's laws, find the total current flow.

Select one:

a. 0.25A

b. 2.5A

c. 0.251A

d. 0.325A

Question 29 Not yet answered Marked out of 1.00 Flag question

b. Voltage source at the periphery of circuit

c. Current source between two loops

d. Dependent voltage source between two branches

Question 27 Not yet answered Marked out of 1.00 Flag question

In a circuit junction, three branch currents (I1=8A, I2=5A and I3=10A) converge. Calculate the total current flowing into the junction.

Select one:

a. 23A

b. 3A

c. 10A

d. 32A

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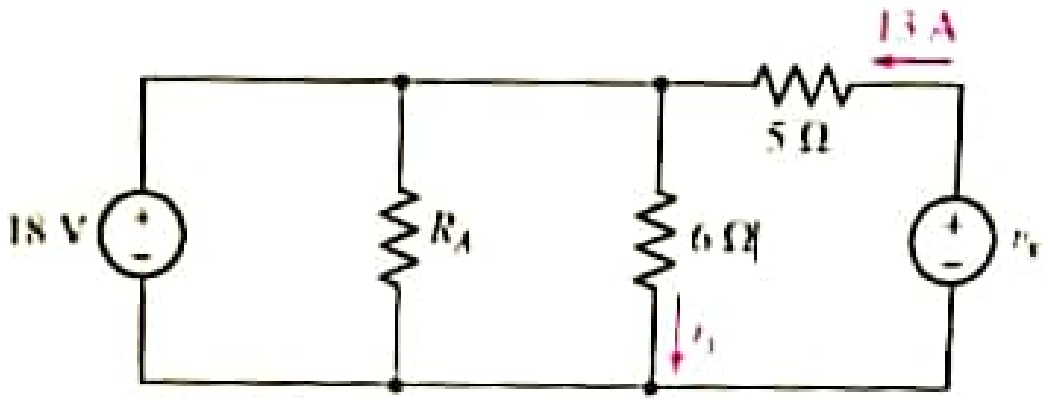
If the 6 ? resistor draws a current of 3 A and the 18 V source delivers a current of 8 A in the above circuit, determine Vx



Select one:

- a. 83V
- b. 85V
- c. 84.5V
- d. 82.3V

Question 17

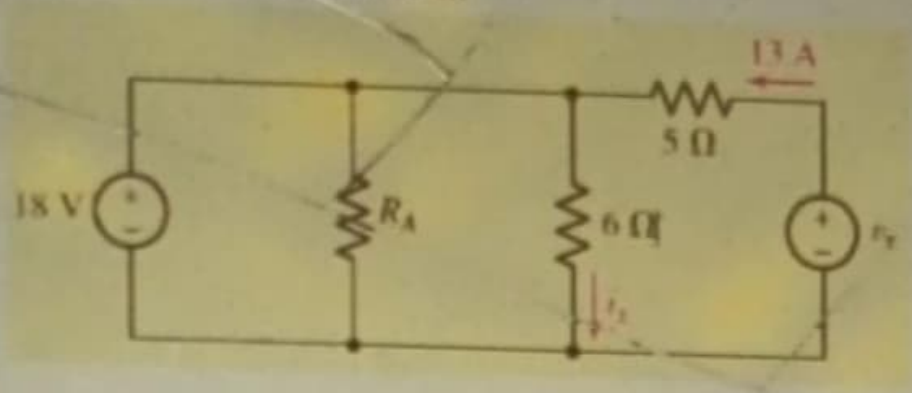
Not yet answered Marked out of 1.00

Flag question

In a circuit with two resistors; R_1=200? and R_2=300? are connected in

32°C
Haze

If the 6 Ω resistor draws a current of 3 A and the 18 V source delivers a current of 8 A in the above circuit, determine Vx



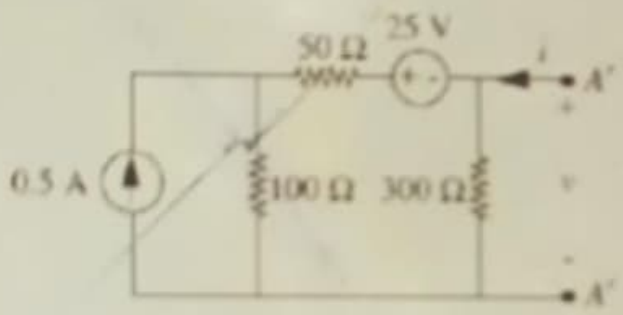
Select one:

- a. 83V
- b. 85V
- c. 84.5V
- d. 82.3V

Question 20

Not yet answered Marked out of 1.00 Flag question

Determine the Norton equivalent V_N and R_N across the terminal A^1A^1 in the network shown below:



Select one:

- a. $I_N = 1.896\ A$ and $R_N = 77.78\ \Omega$
- b. $I_N = 0.1667\ A$ and $R_N = 77.78\ \Omega$
- c. $I_N = 0.1667\ A$ and $R_N = 100\ \Omega$
- d. $I_N = -0.567\ A$ and $R_N = 90\ \Omega$

EEG211_QUIZ1_B
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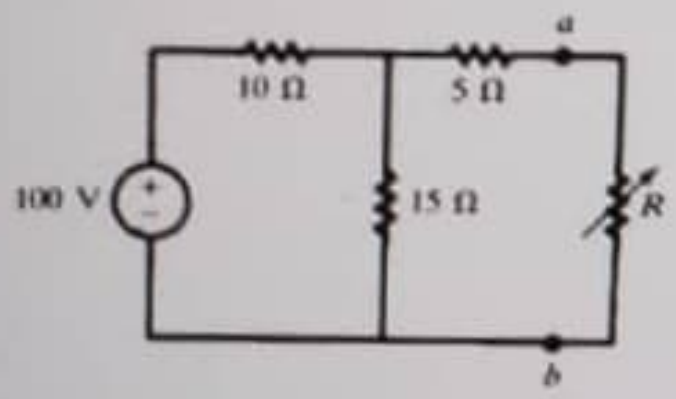
Given the experimental setup shown, the measured resistance that resulted in maximum power transfer across the terminals ***ab*** of the circuit was 11.5 ?. Deduce the computed values of R that will result in maximum power transfer and the maximum power transferred.



Select one:

- a. 11.5 ?; 78.26W
- b. 12.0 ?; 75.00W
- c. 11.0 ?; 81.82W
- d. 12.5 ?; 72.00W

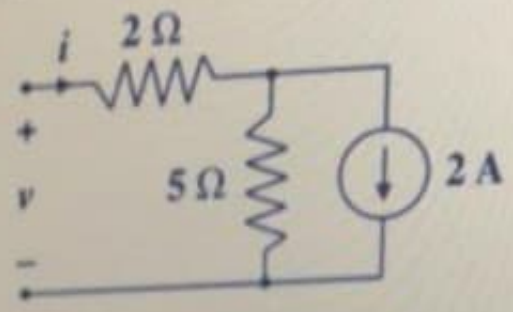
Next pag
◄ Announcements
GBP/AUD

testonline.unilag.edu.ng/mod/quiz/attempt.php?attemp...

New Tab Python for Data Sci...

Question 29 Not yet answered Marked out of 1.00 Flag question

The i-v law describing the network shown below is given as:

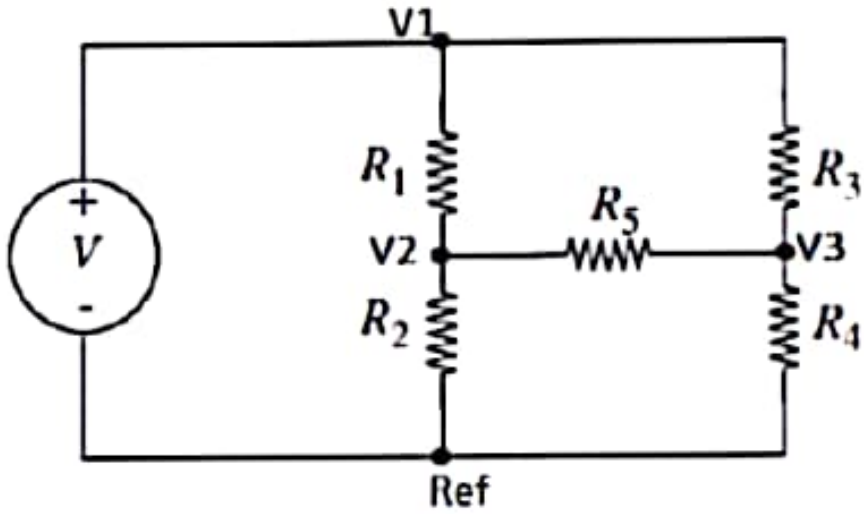


Select one:

- a. $i = \frac{v}{7} + \frac{10}{7}$
- b. $i = -\frac{v}{7} + \frac{10}{7}$
- c. $i = \frac{v}{7} - \frac{10}{7}$
- d. $i = \frac{-v}{7} - \frac{10}{7}$

Marked out of 1.00 Flag question

The conductance matrix for the network shown below can be written by inspection as:



Select one:

○ a.

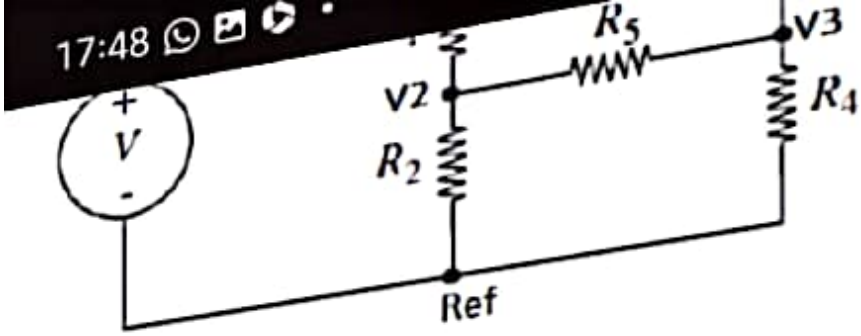
$$\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3} & 0 & -\frac{1}{R_3} \\ 0 & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$$

○ b.

$$\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_1} & -\frac{1}{R_3} \\ -\frac{1}{R_1} & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$$

○ c.

$$\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3} & -\frac{1}{R_1} & -\frac{1}{R_3} \\ -\frac{1}{R} & \frac{1}{R}+\frac{1}{R}+\frac{1}{R} & -\frac{1}{R} \end{bmatrix}$$



Select one:

○ a.

$$\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3} & 0 & -\frac{1}{R_3} \\ 0 & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$$

○ b.

$$\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_1} & -\frac{1}{R_3} \\ -\frac{1}{R_1} & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$$

○ c.

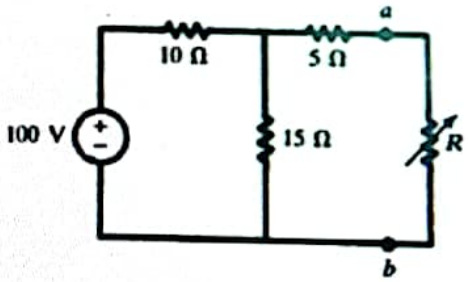
$$\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3} & -\frac{1}{R_1} & -\frac{1}{R_3} \\ -\frac{1}{R_1} & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$$

○ d.

$$\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3} & -\frac{1}{R_5} & -\frac{1}{R_2} \\ -\frac{1}{R_5} & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_2} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$$

Question 26 Not yet answered Marked out of 1.00 Flag question

Given the experimental setup shown, the measured resistance that resulted in maximum power transfer across the termin circuit was 11.5 ?. Deduce the computed values of R that will result in maximum power transfer and the maximum power t



Select one:

- a. 11.5 ?; 78.26W
- b. 12.0 ?; 75.00W
- c. 11.0 ?; 81.82W
- d. 12.5 ?; 72.00W

b. $V_L = 100\,V$

c. $V_L = 150\,V$

d. $V_L = 200\,V$

Question 30

Not yet answered Marked out of 1.00

Flag question

In a circuit which has two resistors that are connected in parallel (R_1=120? and R_2=180?) and is supplied by a voltage source of 30V, calculate the voltage drop across the 180? resistor.

Select one:

a. 0.42A

b. 0.168A

c. 0.001A

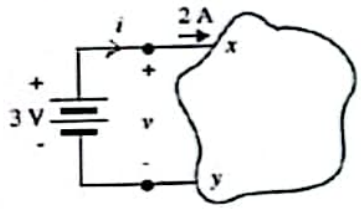
d. 0.0048A

Finish attempt ...

- b. Ideal current source is one whose internal conductance is zero
- c. Ideal voltage source is one whose internal conductance is zero
- d. Ideal voltage source is one whose internal resistance is zero

Question 30 Not yet answered Marked out of 1.00 Flag question

Consider the circuits shown in the figure below. Determine the terminal variables v and i, use the terminal variables to v and i to determine the power, specify whether the power in is stored or delivered by the battery.



Select one:

- a. $v = 3\,V, i = -2\,A, p = -6\,W, -$*power implies* $6\,W$ *is delivered by the battery*
- b. $v = -3\,V, i = -2\,A, p = 6\,W, +$*power implies* $6\,W$ *is stored in the battery*
- c. $v = -3\,V, i = -2\,A, p = -6W, -$ *power implies* $6\,W$ *is delivered by the battery*
- d. $v = 3\,V, i = 2\,A, p = 6W, +$*power implies* $6\,W$ *is stored in the battery*

Fini

◀ Announcements

Jump to...

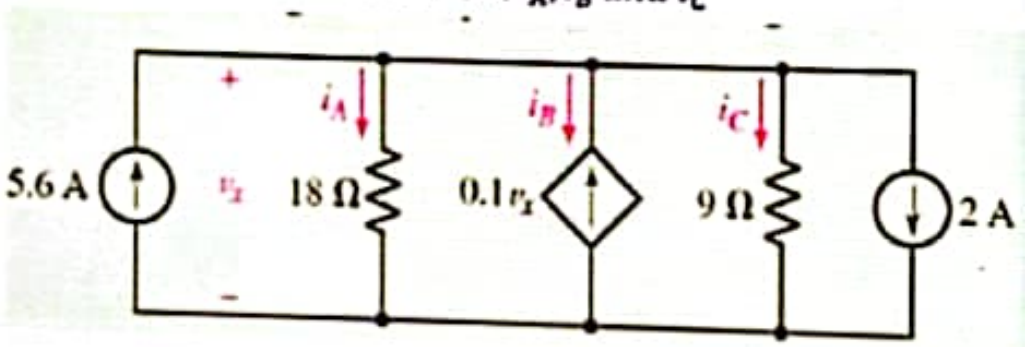
Question 21

Not yet answered

Marked out of 1.00

Flag question

Determine the branch current i_A, i_B and i_C



Select one:

- a. 3A, -5.4A, 6A
- b. 3A, -4.4A, 5A
- c. 2.8A, -4.5A, 6A
- d. 2.8A, -5A, 5.8 A

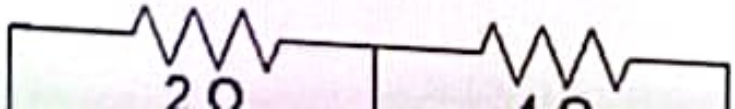
Question 22

Not yet answered

Marked out of 1.00

Flag question

Determine the power dissipated in the 5 ohms resistor in the network shown below



Question 29

Not yet answered Marked out of 1.00 Flag questior

Which of the following is not correct?

Select one:

- a. Ideal voltage source is one whose generated voltage is equal to the availab
- b. Ideal current source is one whose internal conductance is zero
- c. Ideal voltage source is one whose internal conductance is zero
- d. Ideal voltage source is one whose internal resistance is zero

Question 30

Not yet answered Marked out of 1.00

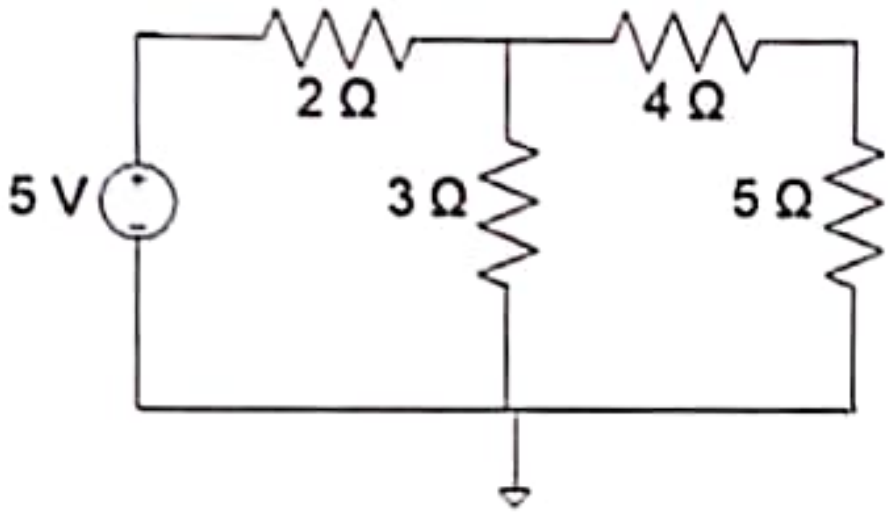
Question 22

Not yet answered

Marked out of 1.00

Flag question

Determine the power dissipated in the 5 ohms resistor in the network shown below



Select one:

- a. **0.53 W**
- b. **1.25 W**
- c. **2.45 W**
- d. **0.43 W**

Question 23

Not yet answered

Marked out of 1.00

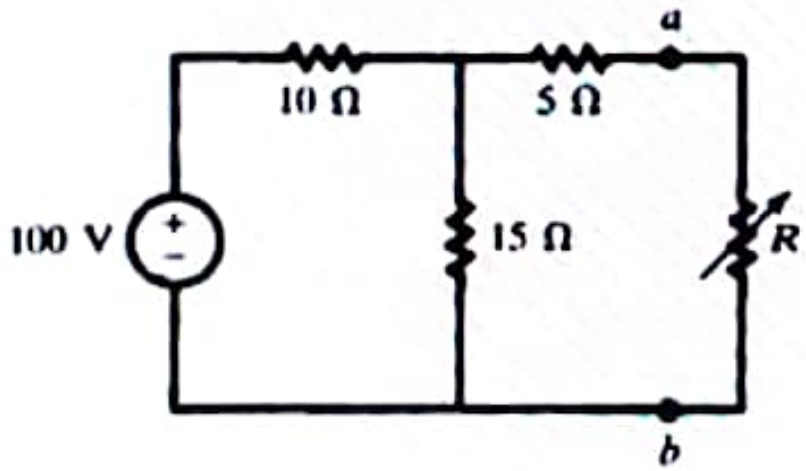
Flag question

If the 6 ? resistor draws a current of 3 A and the 18 V source delivers a current of 8 A in the above circuit, determine R_A

Question 30 Not yet answered

Marked out of 1.00 Flag question

Given the experimental setup shown, the measured resistance that resulted in maximum power transfer across the terminals ***ab*** of the circuit was 11.5 ?. Deduce the computed values of R that will result in maximum power transfer and the maximum power transferred.



Select one:

- a. 11.5 ?; 78.26W
- b. 12.0 ?; 75.00W
- c. 11.0 ?; 81.82W
- d. 12.5 ?; 72.00W

Finish attempt

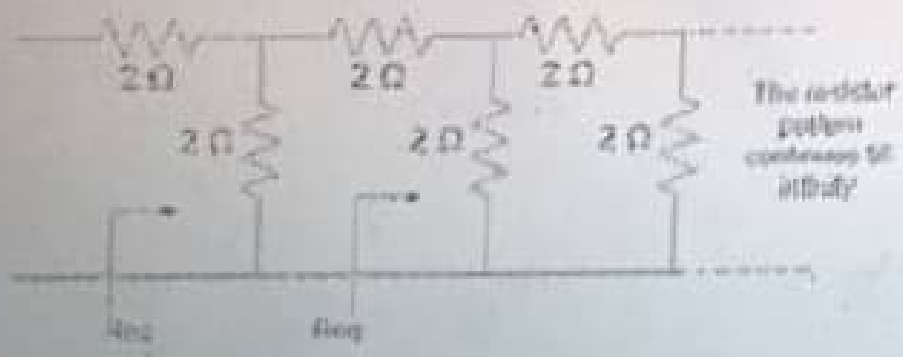
Course: EEG211_QUIZ_2023 | Kirchhoff's Current Law (KCL) | Kirchhoff's Voltage Law (KVL)

testonline.unilag.edu.ng/mod/quiz/attempt.php?attempt=544748&cmid=397

Question 1

Not yet answered Marked out of 1.00 Flag question

Determine the equivalent resistance of the ladder network shown below:



Select one:

- a. 3.33 Ω
- b. 3.25 Ω
- c. 2.414 Ω
- d. 1 Ω

Question 2

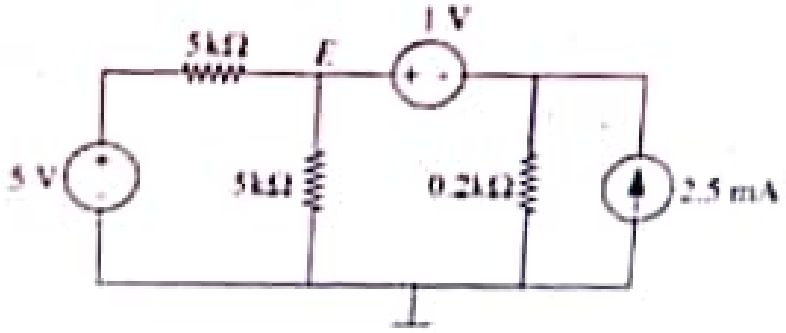
Not yet answered Marked out of 1.00 Flag question

Identify a voltage controlled current source from the following

Question 4

Not yet answered Marked out of 1.00 Flag q

Determine the node voltage E in the network shown below



Select one:

- a. 2.24 V
- b. 1.45 V
- c. 1.57 V
- d. 2.54 V

Question 5

Not yet answered Marked out of 1.00 Flag question

Which of the following is not correct?

Select one:

- a. Ideal voltage source is one whose generated voltage is equal to the avail

EEG211_QUIZ1C

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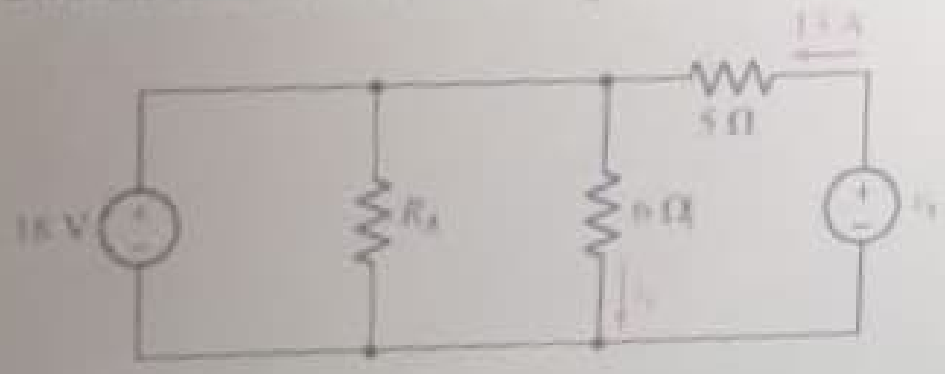
Question 1

Not yet answered Marked out of 1.00 Flag question

If the 6 Ω resistor draws a current of 3 A and the 18 V source delivers a current of 8 A in the above circuit, determine R_A



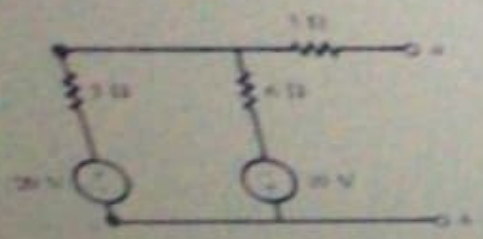
Select one:

- a. 2 ohms
- b. 2.4 ohms
- c. 1 ohms
- d. 3 ohms

Question 2

Not yet answered Marked out of 1.00 Flag question

The figure shown is the experimental setup for the validation of Thevenin's theorem. Based on measured data, the Thevenin equivalent circuit was seen to be the same as the series connected 11.2V voltage source and 5.8 ? resistor. Compare the readings with the computed values.



a. 0.04A

b. 0.6A

c. 0.05A

d. 0.06A

Question 4 Not yet answered Marked out of 1.00 Flag question

If a circuit which has two resistors that are connected in parallel (R_1=120Ω and R_2=180Ω) and is supplied by a voltage source of 30V, calculate the voltage drop across the 120Ω resistor.

Select one:

a. 0.4A

b. 0.1A

c. 0.2A

d. 0.3A

211_QUIZ1C

https://testonline.unilag.edu.ng/mod/quiz/attempt.php?attempt=54494&cmid=397

a. 0.42A

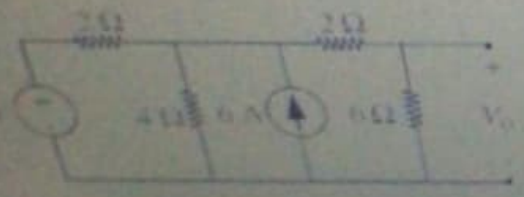
b. 0.168A

c. 0.001A

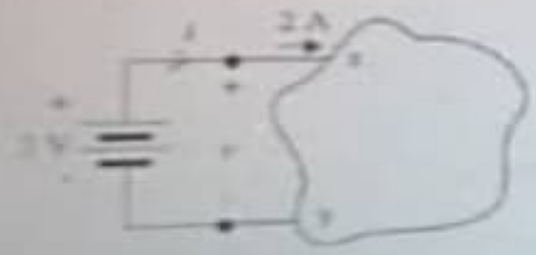
d. 0.00048A

Question 5 Not yet answered Marked out of 1.00 Flag question

In the circuit shown below, the response V_o due to the input voltage source is_____



Consider the circuits shown in the figure below. Determine the terminal variables v and i. use the terminal varia
for v and i to determine the power, specify whether the power in is stored or delivered by the battery.



Select one:

- a. $v = 3\,V, i = -2\,A, p = -6\,W$, −power implies 6 W is delivered by the battery
- b. $v = -3\,V, i = -2\,A, p = 6\,W$, +power implies 6 W is stored in the battery
- c. $v = -3\,V, i = -2\,A, p = -6\,W$, − power implies 6 W is delivered by the battery
- d. $v = 3\,V, i = 2\,A, p = 6\,W$, +power implies 6 W is stored in the battery

Flag question

Question 8

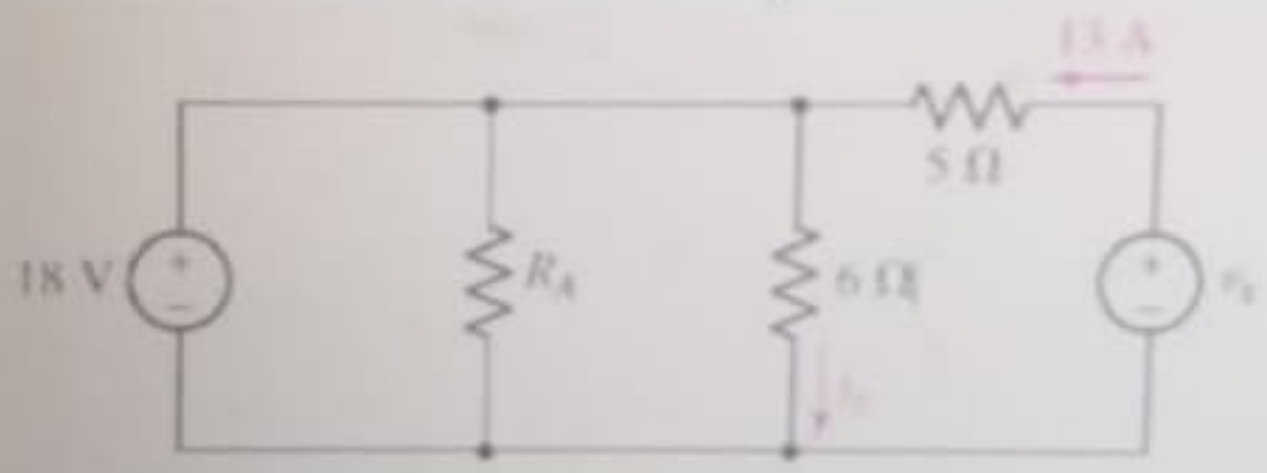
Did you answered Marked out of 1.00

The nodal-voltage equations for the network shown below can be written by inspection as:

Question 1

Not yet answered Marked out of 1.00 Fl

If the 6 ? resistor draws a current of 3 A and the 18 V source delivers 8 A in the above circuit, determine R_A



Select one:

- a. 2 ohms
- b. 2.4 ohms
- c. 1 ohms
- d. 3 ohms

Question 2

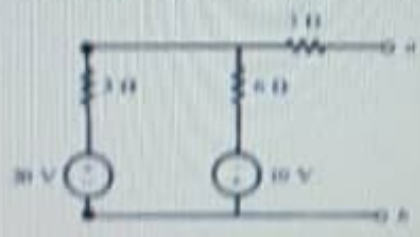
Not yet answered Marked out of 1.00 Flag q

https://testonline.unilag.edu.ng/mod/quiz/attempt.php?attempt=54494&cmid=397

d. 8.2 V

Question 2 Not yet answered Marked out of 1.00 Flag question

The figure shown is the experimental setup for the validation of Thevenin's theorem. Based on measured d
Thevenin equivalent circuit was seen to be the same as the series connected 11.2V voltage source and 5.6
Compare the readings with the computed values.



Select one:

- a. 10.0V; 5.0 Ω
- b. 11.2V; 5.6 Ω
- c. 10.8V; 5.0 Ω
- d. 11.0V; 5.6 Ω

Question 3 Not yet answered Marked out of 1.00 Flag question

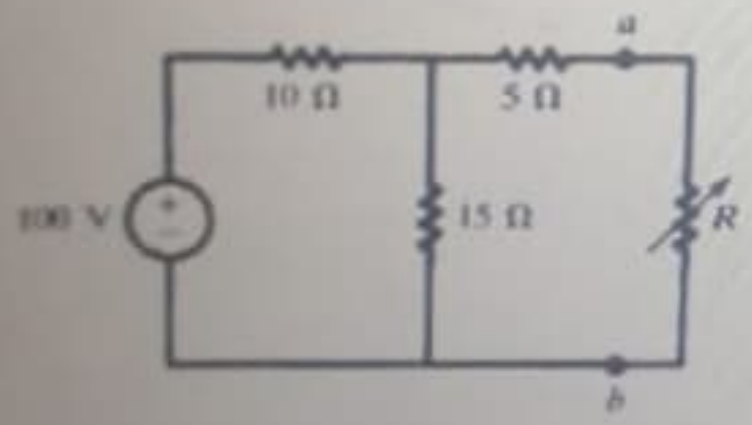
In a circuit with two resistors R1=200Ω and R2=500Ω are connected to series with a voltage source of 10V. Using

Type here to search

Question 5

Not yet answered Marked out of 1.00 Fl

Given the experimental setup shown, the measured resistance that maximum power transfer across the terminals ***ab*** of the circuit was Deduce the computed values of R that will result in maximum power the maximum power transferred.



Select one:

- a. 11.5 Ω; 78.26W
- b. 12.0 Ω; 75.00W
- c. 11.0 Ω; 81.82W
- d. 12.5 Ω; 72.00W

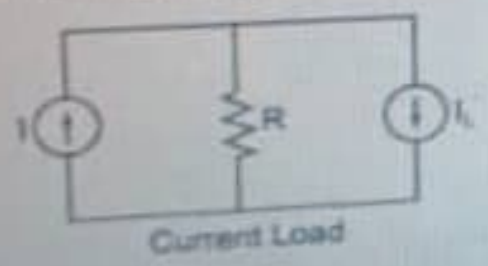
Course: EEG211_QUIZ_2023 | Kirchhoff's Current Law (KCL) | Kirchhoff's Voltage Law (KVL)

testonline.unilag.edu.ng/mod/quiz/attempt.php?attempt=544748&cmid=3978&page=2

Question 11

Not yet answered | Marked out of 1.00 | Flag question

Given that $I = 10\ A$ and $R = 10\ k\Omega$, determine the value of I_L that maximizes the power delivered to it.



Select one:

- a. $I_L = 0.2\ mA$
- b. $I_L = 0.3\ mA$
- c. $I_L = 0.4\ mA$
- d. $I_L = 0.5\ mA$

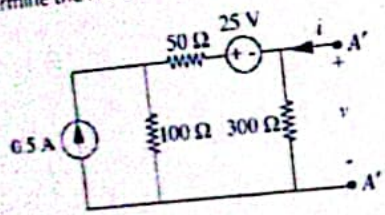
Question 12

Not yet answered | Marked out of 1.00 | Flag question

In linear bilateral elements, in order to determine the response due to one voltage source, all the other voltage sources are _____

Question 9 Not yet answered Marked out of 1.00 Flag question

Determine the Norton equivalent V_N and R_N across the terminal $A^1 A^1$ in the network shown below:



Select one:

- a. $I_N = 1.896\ A$ and $R_N = 77.78\ \Omega$
- b. $I_N = 0.1667\ A$ and $R_N = 77.78\ \Omega$
- c. $I_N = 0.1667\ A$ and $R_N = 100\ \Omega$
- d. $I_N = -0.567\ A$ and $R_N = 90\ \Omega$

Question 10 Not yet answered Marked out of 1.00 Flag question

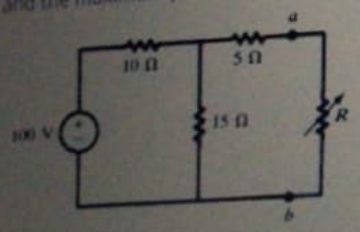
A planar graph has 6 branches and 3 meshes. Then the number of nodes is

Select one:

d. $v = 3V, i = 2A, p = 6W$, ...

Question 8 Not yet answered Marked out of 1.00 Flag question

Given the experimental setup shown, the measured resistance that resulted in maximum power transfer across the terminals ***ab*** of the circuit was 11.5 ?. Deduce the computed values of R that will result in maximum power transfer and the maximum power transferred.



Select one:

a. 11.5 ?; 78.26W

b. 12.0 ?; 75.00W

c. 11.0 ?; 81.82W

d. 12.5 ?; 72.00W

Question 9 Flag question

Closed road on from...

Question 11

Not yet answered Marked out of 1.00

A supermesh is the characterized by connection of

Select one:

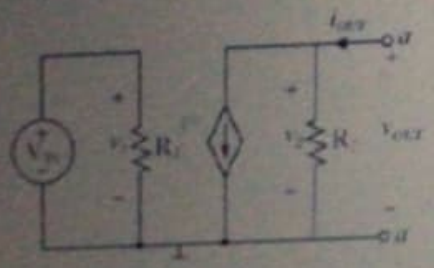
- a. Voltage source between two nodes
- b. Voltage source at the periphery of circuit
- c. Current source between two loops
- d. Dependent voltage source between two branches

Question 12

Not yet answered Marked out of 1.00

https://testonline.unilag.edu.ng/mod/quiz/attempt.php?attempt=54494&cmid=397&page=2

The network below is setup in the Lab. If you were told to replace this with a Thevenin equivalent observed at the output port, what will be the expression for the Thevenin voltage?



Select one:

- a. $V_{TH} = -gV_{in}R_1$
- b. $V_{TH} = -gV_{OUT}R_2$
- c. $V_{TH} = -gV_{in}R_2$
- d. $V_{TH} = -gV_{OUT}R_1$

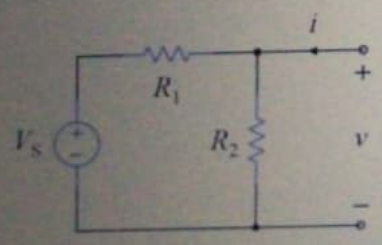
Question 15

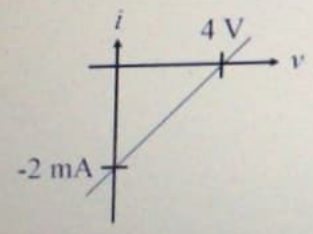
Flag question

EEG211_QUIZ1C

https://testonline.unilag.edu.ng/mod/quiz/attempt.php?attempt=54494&cmid=397&page=2

Shown below is a network comprising one voltage source with an unknown value Vs and two unknown resistors R_1 and R_2. Also shown is the I-V characteristics measured at the port of the network. Finally, it is observed that resistors R_1 and R_2 in the network dissipate 4mW in total when the port is left as an open circuit. Use the I-V relations and the dissipated power to determine Vs, R_1 and R_2.





Select one:

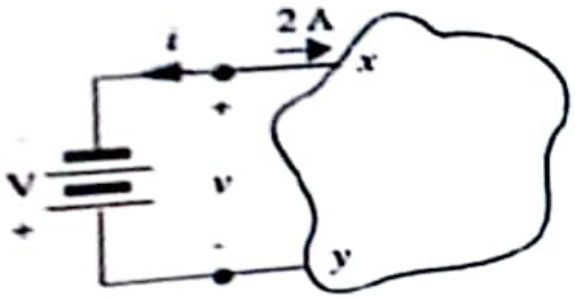
- a. 6V, 3 kΩ and 6 kΩ
- b. 8V, 4 kΩ and 6 kΩ
- c. 8V, 4 kΩ and 8 kΩ
- d. 6V, 3 kΩ and 1.5 kΩ

Next page

Question 21

Not yet answered Marked out of 1.00 Flag question

Consider the circuits shown in the figure below. Determine the terminal variables v and i, use the terminal variables to v and i to determine the power, specify whether the power in is stored or delivered by the battery.



Select one:

- a. $v = 3\,V, i = -2\,A, p = -6\,W$, −power implies 6 W is delivered by the battery
- b. $v = -3\,V, i = -2\,A, p = 6\,W$, +power implies 6 W is stored in the battery
- c. $v = -3\,V, i = -2\,A, p = -6W$, − power implies 6 W is delivered by the battery
- d. $v = 3\,V, i = 2\,A, p = 6W$, +power implies 6 W is stored in the battery

Question 22

Not yet answered Marked out of 1.00 Flag question

for lumped elements consist of the following constraints

c. V_{th}

d. $V_{th} = -49\,V$ and $R_{th} = 5\,k\Omega$

Question 17 Not yet answered Marked out of 1.00 Flag question

Which of the following is true in the measurement of Thevenin resistance across the load in a network with ideal voltage and current sources?

Select one:

a. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are removed.

b. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are turned off.

c. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage source is replaced with short circuit while the current source is replaced with open circuit.

d. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are replaced with short circuit.

Question 18 Flag question

Consider the network shown in the figure below. Find the current in the circuit shown below.

b. 1.25 W

c. 2.45 W

d. 0.43 W

Question 19 Not yet answered Marked out of 1.00 Flag question

In a circuit junction, three branch currents (I1=8A, I2=5A and I3=10A) converge. Calculate the total current flowing into the junction.

Select one:

a. 23A

b. 5A

c. 10A

d. 32A

Question 20 Not yet answered Marked out of 1.00 Flag question

Superposition theorem is used in order to determine the response due to one voltage source, all the other voltage sources are replaced

Select one:

G211_QUIZ1C

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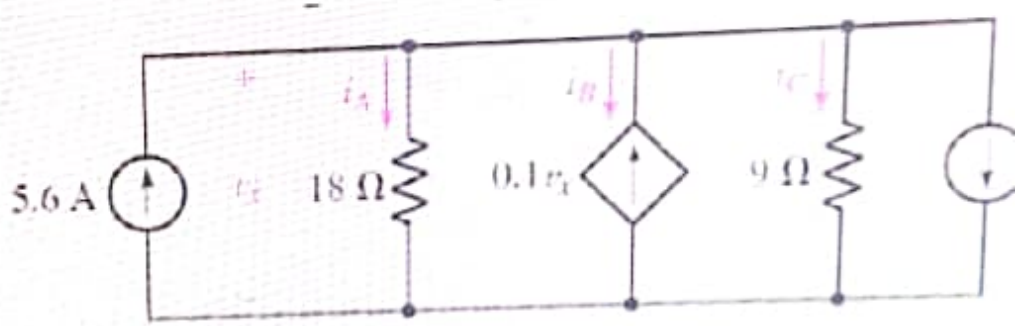
ne > My courses > EEG211 > 20 December - 26 December >

Question 21

Not yet answered Marked out of 1.00

Determine the branch current i_A, i_B and i_C



Select one:

- a. 3A, -5.4A, 6A
- b. 3A, -4.4A, 5A
- c. 2.8A, -4.5A, 6A
- d. 2.8A, -5A, 5.8 A

Question 22

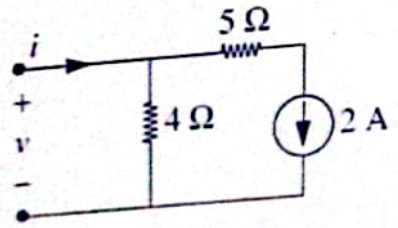
Not yet answered Marked out of 1.00

Determine the power dissipated in the 5 ohms resistor in the circuit below.

Question 23

Not yet answered Marked out of 1.00 Flag question

The i-v law describing the network shown below is given as:



Select one:

- a. $i = \frac{v}{4} + 2$
- b. [illegible]
- c. $i = \frac{9v}{20} + 2$
- d. $i = \frac{v}{4} - 2$

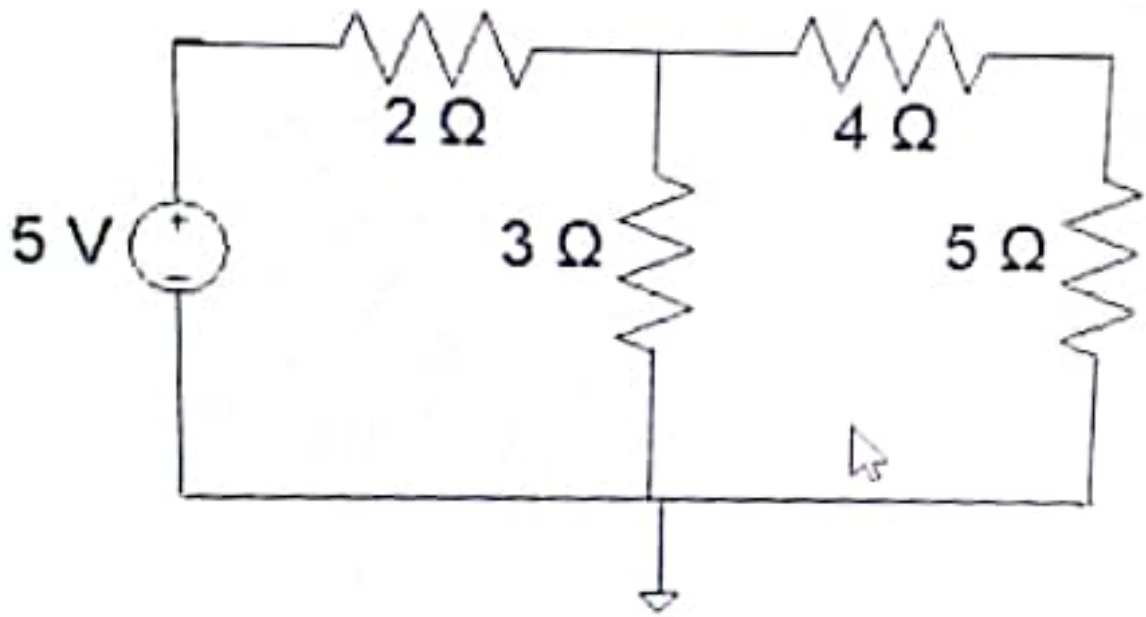
Question 24

Flag question

Question 22

Not yet answered Marked out of 1.00

Determine the power dissipated in the 5 ohms resistor in the below

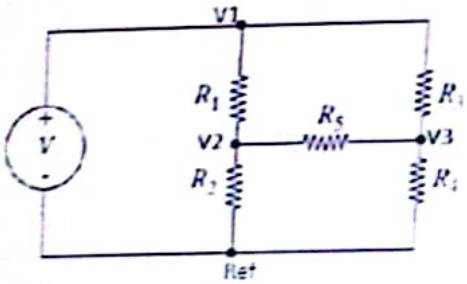


Select one:

- a. 0.53 W
- b. 1.25 W
- c. 2.45 W
- d. 0.43 W

Question 23

The conductance matrix for the network shown below can be written by inspection as:



Select one:

a. $\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3} & 0 & -\frac{1}{R_3} \\ 0 & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$

b. $\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_1} & -\frac{1}{R_3} \\ -\frac{1}{R_1} & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_6} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$

c. $\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3} & -\frac{1}{R_1} & -\frac{1}{R_3} \\ -\frac{1}{R_1} & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_6} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$

d. $\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3} & -\frac{1}{R_1} & -\frac{1}{R_3} \end{bmatrix}$

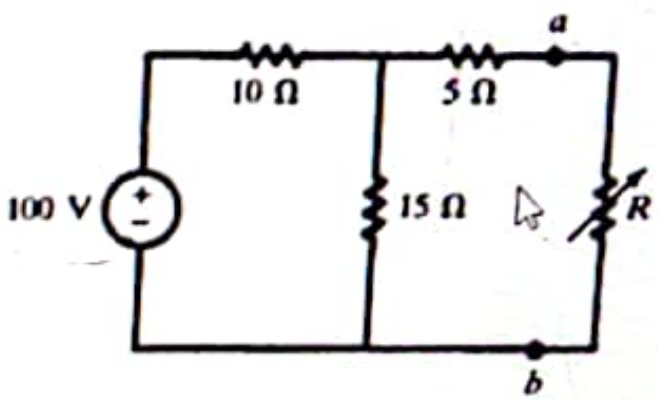
- b. $1.45\,V$
- c. $1.57\,V$
- d. $2.54\,V$

Question 7

Not yet answered Marked out of 1.00

Flag question

Given the experimental setup shown, the measured resistance that resulted in maximum power transfer across the terminals ***ab*** of the circuit was 11.5 ?. Deduce the computed values of R that will result in maximum power transfer and the maximum power transferred.



Select one:

- a. 11.5 ?; 78.26W
- b. 12.0 ?; 75.00W
- c. 11.0 ?; 81.82W
- d. 12.5 ?; 72.00W

Question 8

Not yet answered Marked out of 1.00

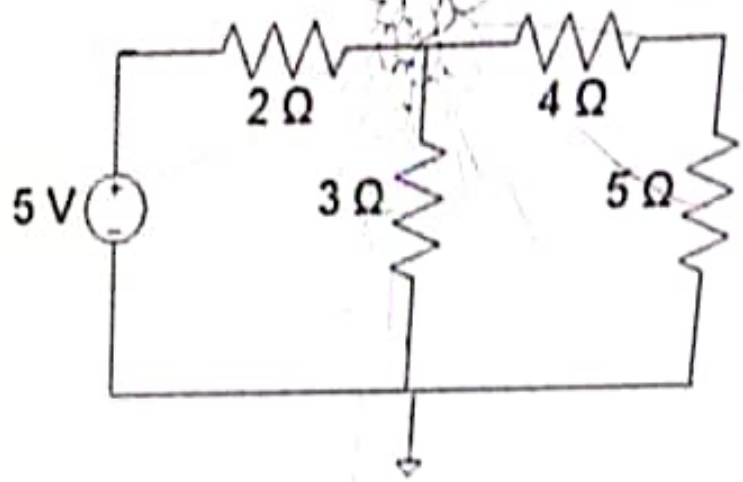
Flag question

Question 9

Not yet answered Marked out of 1.00

Flag question

Determine the power dissipated in the 5 ohms resistor in the network shown below



Select one:

- a. 0.53 W
- b. 1.25 W
- c. 2.45 W
- d. 0.43 W

Question 10

Not yet answered Marked out of 1.00

Flag question

The figure shown is the experimental setup for the validation of Thevenin's theorem. Based on measured data, the Thevenin

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Select one:

a. $\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3} & 0 & -\frac{1}{R_3} \\ 0 & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$

b. $\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_1} & -\frac{1}{R_3} \\ -\frac{1}{R_1} & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$

c. $\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3} & -\frac{1}{R_1} & -\frac{1}{R_3} \\ -\frac{1}{R_1} & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$

d. $\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3} & -\frac{1}{R_5} & -\frac{1}{R_2} \\ -\frac{1}{R_4} & \frac{1}{R_3}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_7} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_6} \end{bmatrix}$

Question 22

Flag Question

d. Energy

Flag question

Question 30 Not yet answered Marked out of 1.00

Which of the following is not correct?

Select one:

a. Ideal voltage source is one whose generated voltage is equal to the available voltage

b. Ideal current source is one whose internal conductance is zero

c. Ideal voltage source is one whose internal conductance is zero

d. Ideal voltage source is one whose internal resistance is zero

Finish attempt

Jump to ...

◄ Announcements

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charge for all time.

- c. The signal timescales of interest are much larger than the propagation delay of electromagnetic waves across the lumped elements.

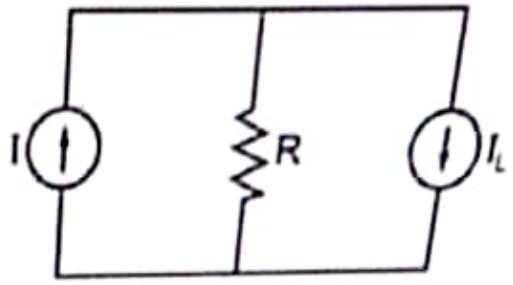
- d. The signal timescales of interest are much smaller than the propagation delay of electromagnetic waves across the lumped elements.

Question 13

Not yet answered Marked out of 1.00

Flag question

Given that $I = 10\ A$, and $R = 10\ k\Omega$, determine the value of I_L that maximizes the power delivered to it.



Current Load

Select one:

- a. $I_L = 0.2\ mA$
- b. $I_L = 0.3\ mA$
- c. $I_L = 0.4\ mA$
- d. $I_L = 0.5\ mA$

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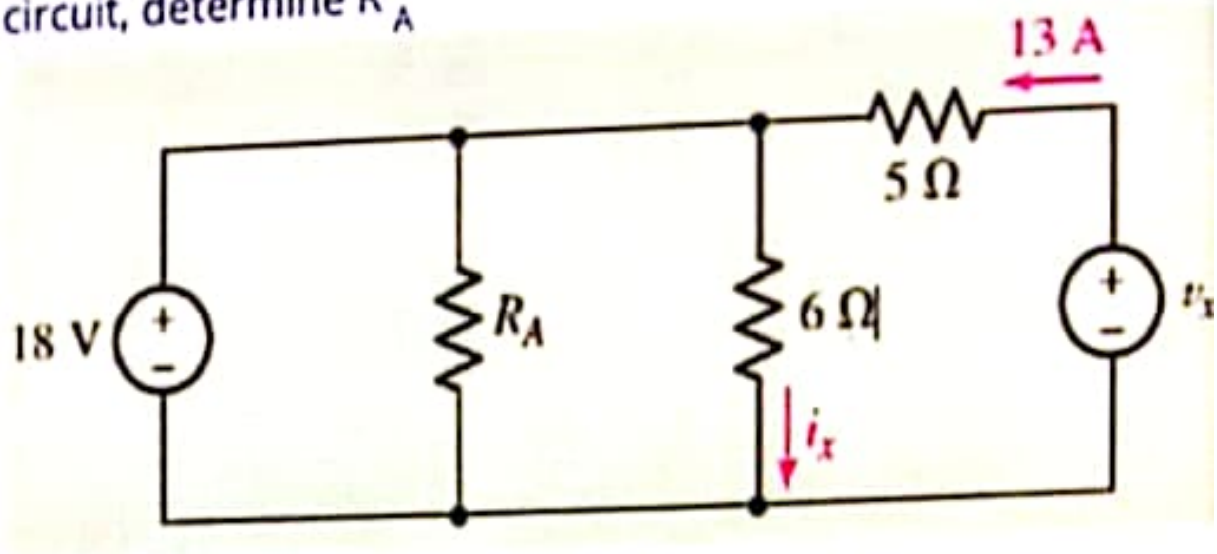
Question 26

Not yet answered

Marked out of 1.00

Flag question

If the 6 ? resistor draws a current of 3 A and the 18 V source delivers a current of 8 A in the above circuit, determine R_A



Select one:

- a. 2 ohms
- b. 2.4 ohms
- c. 1 ohms
- d. 3 ohms

Question 27

Not yet answered

Marked out of 1.00.

Flag question

The network below is setup in the Lab, if you

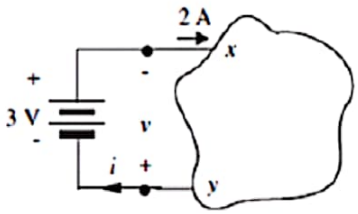
Question 26

Not yet answered

Marked out of 1.00

Flag question

Consider the circuits shown in the figure below. Determine the terminal variables v and i, use the terminal variables to v and i to determine the power, specify whether the power in is stored or delivered by the battery.



Select one:

- a. $v = 3\,V, i = -2\,A, p = -6\,W, -power\ implies\ 6\,W\ is\ delivered\ by\ the\ battery$
- b. $v = -3\,V, i = -2\,A, p = 6\,W, +power\ implies\ 6\,W\ is\ stored\ in\ the\ battery$
- c. $v = -3\,V, i = -2\,A, p = -6W, -\ power\ implies\ 6\,W\ is\ delivered\ by\ the\ batter$
- d. $v = 3\,V, i = 2\,A, p = 6W, +power\ implies\ 6\,W\ is\ stored\ in\ the\ battery$

Question 27

Not yet answered

Marked out of 1.00

Flag question

Which of the following is true in the measurement of Thevenin resistance across the load in a network with ideal voltage and current sources?

Select one:

- a. Thevenin resistance is measured

18:36 21%
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Which of the following is true in the measurement of Thevenin resistance across the load in a network with ideal voltage and current sources?

Select one:

- a. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are removed.
- b. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are turned off.
- c. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage source is replaced with short circuit while the current source is replaced with open circuit.
- d. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are replaced with short circuit.

Question 28 Not yet answered

Marked out of 1.00 **Flag question**

In a circuit with three resistors (R_1=100?, R_2=150? and R_3=200?) connected in parallel configuration which is then connected to a voltage source of 15Volts. Using Kirchhoff's laws, find the total current flow.

Select one:

- a. 0.25A
- b. 2.5A
- c. 0.251A
- d. 0.325A

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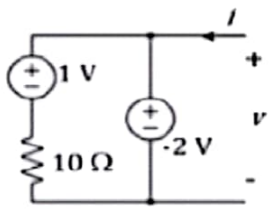
- b. 2.5A
- c. 0.251A
- d. 0.325A

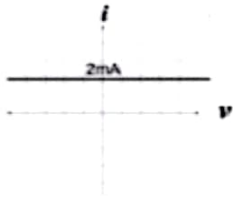
Question 29 Not yet answered

Marked out of 1.00 **Flag question**

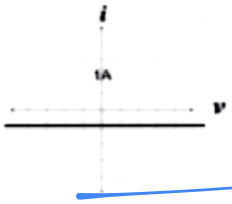
Given the circuit below to analyse in the Lab, the I-V characteristics will be of the form:



Select one:

a.


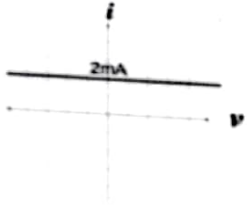
b.

c.


d.

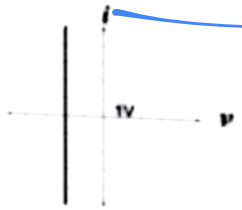
Question 30 Not yet answered

Marked out of 1.00 **Flag question**

a. 

b.

c.

d. 

Question 30

Not yet answered

Marked out of 1.00

Flag question

A planar graph has 6 branches and 3 meshes. Then the number of nodes is

Select one:

a. 6

b. 4

c. 3

d. 2

Finish attempt ...

← Announcements

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Quiz navigation

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d.

$v = 3\,V, i = 2\,A, p = 6W, +power\ implies\ 6\,W\ is\ stored\ in\ the\ battery$

Question 27 Not yet answered

Marked out of 1.00 **Flag question**

Which of the following is true in the measurement of Thevenin resistance across the load in a network with ideal voltage and current sources?

Select one:

- a. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are removed.
- b. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are turned off.
- c. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage source is replaced with short circuit while the current source is replaced with open circuit.
- d. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are replaced with short circuit.

Question 28 Not yet answered

Marked out of 1.00 **Flag question**

In a circuit with three resistors (R_1=100?, R_2=150? and R_3=200?) connected in parallel configuration which is then connected to a voltage source of 15Volts. Using Kirchhoff's

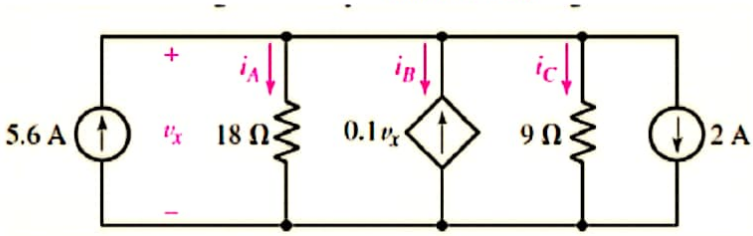
Question 21

Not yet answered

Marked out of 1.00

Flag question

Determine the branch current i_A, i_B and i_C



Select one:

- a. 3A, -5.4A, 6A
- b. 3A, -4.4A, 5A
- c. 2.8A, -4.5A, 6A
- d. 2.8A, -5A, 5.8 A

Question 22

Not yet answered

Marked out of 1.00

Flag question

Which of these characteristic equations represent a non-linear element?

Select one:

- a. $v + \frac{2}{3}i = 0$
- b. $i + 0.5v = 5$
- c. $v + 3^2 i = 0$
- d. $i = i_s(e^{\frac{v_D}{nV_T}} - 1)$

Question 23

Not yet answered

Marked out of 1.00

Flag question

Consider the circuits shown in the figure below. Determine the terminal variables v and i, use the terminal variables to v and i to determine the power, specify whether the power in is stored or delivered by the battery.

18:35 21%
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Select one:

- a. $v + \frac{2}{3}i = 0$
- b. $i + 0.5v = 5$
- c. $v + 3^2 i = 0$
- d. $i = i_s(e^{\frac{vD}{nvT}} - 1)$

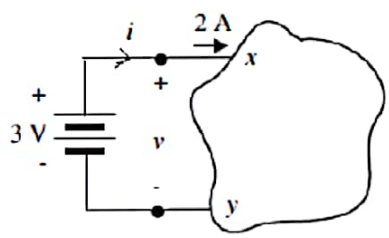
Question 23

Not yet answered

Marked out of 1.00

Flag question

Consider the circuits shown in the figure below. Determine the terminal variables v and i, use the terminal variables to v and i to determine the power, specify whether the power in is stored or delivered by the battery.



Select one:

- a. $v = 3\,V, i = -2\,A, p = -6\,W, -power\ implies\ 6\,W\ is\ delivered\ by\ the\ battery$
- b. $v = -3\,V, i = -2\,A, p = 6\,W, +power\ implies\ 6\,W\ is\ stored\ in\ the\ battery$
- c. $v = -3\,V, i = -2\,A, p = -6W, -power\ implies\ 6\,W\ is\ delivered\ by\ the\ batter$
- d. $v = 3\,V, i = 2\,A, p = 6W, +power\ implies\ 6\,W\ is\ stored\ in\ the\ battery$

Question 24

Not yet answered

Marked out of 1.00

Flag question

The figure shown is the experimental setup for the validation of Thevenin's theorem. Based on measured data, the Thevenin equivalent circuit was seen to be the same as the series connected 11.2V voltage source and 5.8 ? resistor. Compare the

18:35 21%

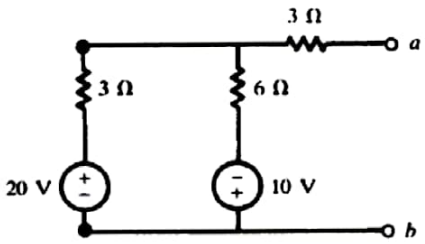
Question 24

Not yet answered

Marked out of 1.00

Flag question

The figure shown is the experimental setup for the validation of Thevenin's theorem. Based on measured data, the Thevenin equivalent circuit was seen to be the same as the series connected 11.2V voltage source and 5.8 ? resistor. Compare the readings with the computed values.



Select one:

- a. 10.0V; 5.0 ?
- b. 11.2V; 5.8 ?
- c. 10.8V; 5.0 ?
- d. 11.0V; 5.8 ?

Question 25

Not yet answered

Marked out of 1.00

Flag question

In a circuit which has two resistors that are connected in parallel (R_1=120? and R_2=180?) and is supplied by a voltage source of 30V, calculate the voltage drop across the 180? resistor.

Select one:

- a. 0.42A
- b. 0.168A
- c. 0.001A
- d. 0.0048A

Next page

← Announcements

Jump to...

Question 16

Not yet answered

Marked out of 1.00

Flag question

In a closed loop with two resistors connected in series whereby R_1 is twice the value of R_2. Calculate the voltage drop across R_1 if the voltage in the circuit is 50V.

Select one:

- a. 33.3V
- b. 50V
- c. 16.7V
- d. 25V

Question 17

Not yet answered

18:34 22%
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Select one:

- a. 33.3V
- b. 50V
- c. 16.7V
- d. 25V

Question 17

Not yet answered

Marked out of 1.00

Flag question

Consider a voltage source with resistor connected in series with it. If the voltage is 10V and the resistor is 1000 Ω, convert the voltage source to an equivalent current source.

Select one:

- a. 1 mA, 10^3 Ω
- b. 0.1 mA, 10^2 Ω
- c. 10 mA, 10^2 Ω
- d. 10 mA, 10^3 Ω

Question 18

Not yet answered

Marked out of 1.00

Flag question

Shown below is a network comprising one

18:34 22%
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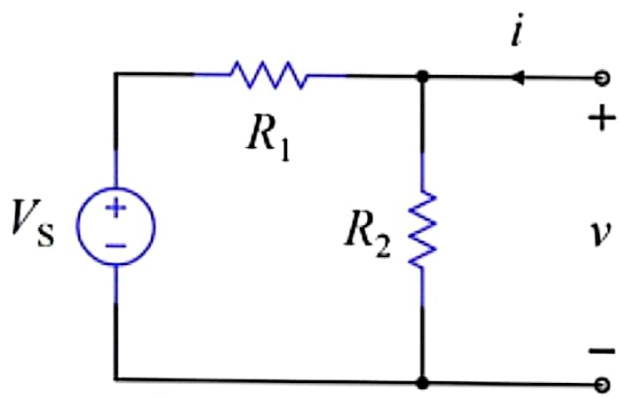
Marked out of 1.00 Flag question

Shown below is a network comprising one voltage source with an unknown value Vs and two unknown resistors R_1 and R_2. Also shown is the I-V characteristics measured at the port of the network. Finally, it is observed that resistors R_1 and R_2 in the network dissipate 4mW in total when the port is left as an open circuit. Use the I-V relations and the dissipated power to determine Vs, R_1 and R_2.



-2

Select one:

- a. 6V, 3 k? and 6 k?
- b. 8V, 4 k? and 6 k?
- c. 8V, 4 k? and 8 k?
- d. 6V, 3 k? and 1.5 k?

Question 19

Not yet answered

Marked out of 1.00 Flag question

18:34 22%
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d. 6V, 3 k? and 1.5 k?

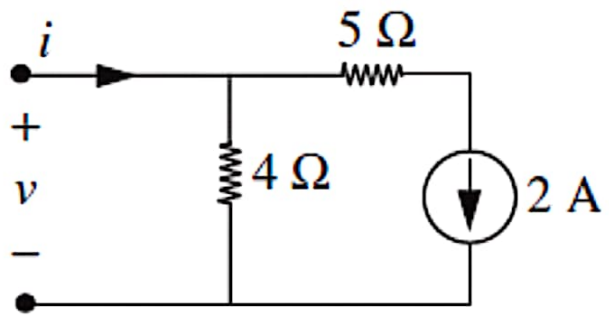
Question 19

Not yet answered

Marked out of 1.00

Flag question

The i-v law describing the network shown below is given as:



Select one:

a. $i = \frac{v}{4} + 2$

b. $i = 2$

c. $i = \frac{9v}{20} + 2$

d. $i = \frac{v}{4} - 2$

Question 20

Not yet answered

Marked out of 1.00

Flag question

Determine the Norton equivalent V_N and R_N across the terminal A^1A^1 in the

18:34 22%
tonline.unilag.edu.ng

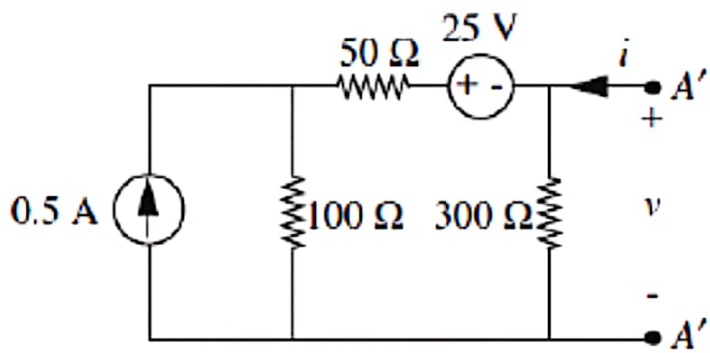
Question 20

Not yet answered

Marked out of 1.00

Flag question

Determine the Norton equivalent V_N and R_N across the terminal A^1A^1 in the network shown below:



Select one:

- a. $I_N = 1.896\ A$ and $R_N = 77.78\ \Omega$
- b. $I_N = 0.1667\ A$ and $R_N = 77.78\ \Omega$
- c. $I_N = 0.1667\ A$ and $R_N = 100\ \Omega$
- d. $I_N = -0.567 A$ and $R_N = 90\ \Omega$

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← Announcements

EEG211_QUIZ1C

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ennis Snellenberg... Minh Pham - Multi... OH.STUDIO

Question 15

Not yet answered Marked out of 1.00

A supermesh is the characterized by connection of

Select one:

- a. Voltage source between two nodes
- b. Voltage source at the periphery of circuit
- c. Current source between two loops
- d. Dependent voltage source between two branches

Announcements

Jump to...

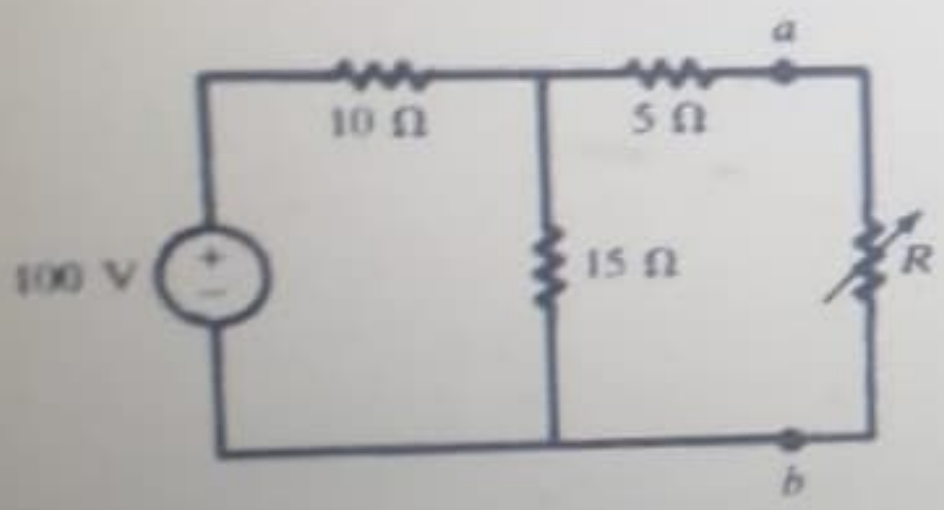
Quiz navigation

1 2 3 4 5 6 7 8 9 10 11 12

17 18 19 20 21 22 23 24 25 26 27 28

Finish attempt

Given the experimental setup shown, the measured resistar
maximum power transfer across the terminals ***ab*** of the circ
Deduce the computed values of R that will result in maximur
the maximum power transferred.



Select one:

- a. 11.5 Ω, 78.26W
- b. 12.0 Ω, 75.00W
- c. 11.0 Ω, 81.82W
- d. 12.5 Ω, 72.00W

Question 10

Question 28

Not yet answered Marked out of 1.00 Flag question

Kirchhoff's Current Law (KCL) obeys the conservation of _____?

Select one:

- a. Mass
- b. Momentum
- c. Charge
- d. Energy

Question 29

Not yet answered Marked out of 1.00 Flag question

In a circuit which has two resistors that are connected in parallel (R_1=120? and R_2=180?) and is supplie voltage source of 30V, calculate the voltage drop across the 180? resistor.

Select one:

- a. 0.42A
- b. 0.168A
- c. 0.001A

32°C Haze Search

b. $3.25\,\Omega$

c. $2.414\,\Omega$

d. $1\,\Omega$

Question 27 Not yet answered Marked out of 1.00 Flag question

Which of the following is true in the measurement of Thevenin resistance across the load in a network with ideal voltage and current sources?

Select one:

a. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are removed.

b. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are turned off.

c. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage source is replaced with short circuit while the current source is replaced with open circuit.

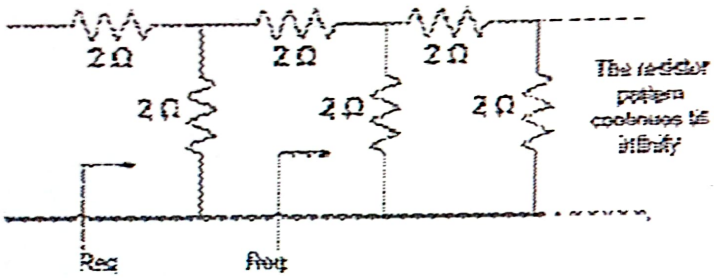
d. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are replaced with short circuit.

Question 28 Not yet answered Marked out of 1.00 Flag question

23°C Search

Question 26 Not yet answered Marked out of 1.00 Flag question

Determine the equivalent resistance of the ladder network shown below:



Select one:

- a. 3.33 Ω
- b. 3.25 Ω
- c. 2.414 Ω
- d. 1 Ω

Question 27 Not yet answered Marked out of 1.00 Flag question

32°C Haze
Search

testonline.unilag.edu.ng/mod/quiz/attempt.php?atte

YouTube Maps Gmail Jumboard A Pen by Adebumb...

Ref

Select one:

a. $\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3} & 0 & -\frac{1}{R_3} \\ 0 & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$

b. $\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3}+\frac{1}{R_5} & -\frac{1}{R_1} & -\frac{1}{R_3} \\ -\frac{1}{R_1} & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$

c. $\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3} & -\frac{1}{R_1} & -\frac{1}{R_3} \\ -\frac{1}{R_1} & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$

d. $\begin{bmatrix} \frac{1}{R_1}+\frac{1}{R_3} & -\frac{1}{R_5} & -\frac{1}{R_3} \\ -\frac{1}{R_5} & \frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_5} & -\frac{1}{R_5} \\ -\frac{1}{R_3} & -\frac{1}{R_5} & \frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5} \end{bmatrix}$

Select one:

- a. 8.56 V
- b. 5.14 V
- c. 3.43 V
- d. 4.57 V

Question 7 Not yet answered Marked out of 1.00 Flag question

The superposition theorem requires as many circuits to be solved as there are

Select one:

- a. independent sources
- b. Nodes and independent loops
- c. independent sources and nodes
- d. independent sources and nodes and meshes

Question 8 Not yet answered Marked out of 1.00 Flag question

In a circuit with three resistors (R_1 = 100 Ω, R_2 = 150 Ω and R_3 = 200 Ω) connected in

EEG211_QUIZ1_D

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nalysis and equations by
nent of the supernode rather than
y useful in nodal analysis.

d non-reference node
ides

nodes

Question 4

Not yet answered

Marked out of 1.00

Flag question

A supernode is a node connected at:

Select one:

- a. Periphery of the circuit
- b. Current source between the reference node and non-reference node
- c. Voltage source between two non-reference nodes
- d. Between resistor and ground

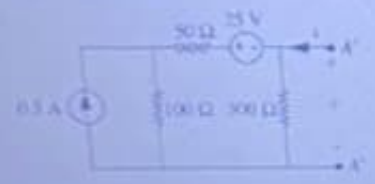
Question 5

Not yet answered

Marked out of 1.00

Flag question

Determine the Norton equivalent V_N and R_N across the terminal A^1A^1 in the network shown below



- a. $I_L = 0.2\,mA$
- b. $I_L = 0.3\,mA$
- c. $I_L = 0.4\,mA$
- d. $I_L = 0.5\,mA$

Question 2 Not yet answered Marked out of 1.00 Flag question

Consider a voltage source with resistor connected in series with it. If the voltage is 10V and the resistor is 1000 Ω, convert the voltage source to an equivalent current source.

Select one:

- a. 1 mA, 10^3 Ω
- b. 0.1 mA, 10^2 Ω
- c. 10 mA, 10^2 Ω
- d. 10 mA, 10^3 Ω

Question 3 Not yet answered Marked out of 1.00 Flag question

In superposition theorem, in order to determine the response due to one voltage source, all the other voltage sources are _____

ChatGPT 3.5

nd mc029-2.jpg, determine the value of mc029-3.jpg that
livered to it.

ight be a misunderstanding or a missing part in your question. You
"mc029-1.jpg" and "mc029-2.jpg," but these files are not provided in
versation. Additionally, the term "mc029-3.jpg" and "mc029-4.jpg"
olders without a clear indication of the values or expressions they

cific circuit or problem you'd like assistance with, please provide more
circuit diagrams, values of components, or specific equations. That way,
derstand your question and provide a more accurate answer.

ChatGPT can make mistakes. Consider checking important information.

testonline.unilag.edu.ng/mod/quiz/attempt.php?atta...

b. $I_L = 0.3\ mA$

c. $I_L = 0.4\ mA$

d. $I_L = 0.5\ mA$

Question 2 Not yet answered Marked out of 1.00 Flag question

Consider a voltage source with resistor connected in series with it. If the voltage is 10V and the resistor is 1000 Ω, convert the voltage source to an equivalent current source.

Select one

a. 1 mA, 10^3 Ω

b. 0.1 mA, 10^2 Ω

c. 10 mA, 10^2 Ω

d. 10 mA, 10^3 Ω

Question 3 Not yet answered Marked out of 1.00 Flag question

In superposition theorem, in order to determine the response due to one voltage source, all the other voltage sources are _____

Select one

ChatGPT 3.5

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In a circuit with three resistors (R_1 = 100Ω, R_2 = 150Ω and R_3 = 200Ω) connected in parallel configuration which is then connected to a voltage source of 5 volts. Using Kirchoff's laws, find the total current flow.

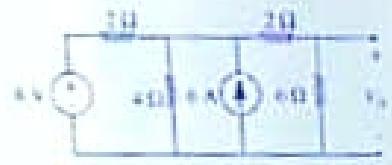
Select one:

- a. 0.25A
- b. 2.5A
- c. 0.25mA
- d. 0.525A

Question 9

Not yet answered | Marked out of 1.00 | Flag question

In the circuit shown below, the response V_o due to the input voltage source is _____



Select one:

- a. 4.5 V

...ed the total current I_{total}

...t answer is not among the provided options. The correct total

...GPT can make mistakes. Consider checking important information.

EEG211_QUIZ1_D

testonline.unilag.edu.ng/mod/quiz/attempt.php?atte...

voltage source, all the other voltage sources are _____

Select one:

- a. Shorted
- b. Opened
- c. Removed
- d. Undisturbed

Question 4

Not yet answered Marked out of 1.00 Flag question

A supernode is a node connected at:

Select one:

- a. Periphery of the circuit
- b. Current source between the reference node and non-reference node
- c. Voltage source between two non-reference nodes
- d. Between resistor and ground

Question 5

Not yet answered Marked out of 1.00 Flag question

Determine the Norton equivalent V_N and R_N across the terminal A^1A^1 in the

EEG211_QUIZ1_D

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a. $I_L = 0.2\ mA$

b. $I_L = 0.3\ mA$

c. $I_L = 0.4\ mA$

d. $I_L = 0.5\ mA$

Question 2

Not yet answered Marked out of 1.00 Flag question

Consider a voltage source with resistor connected in series with it. If the voltage is 10V and the resistor is 1000 Ω, convert the voltage source to an equivalent current source.

Select one:

a. 1 mA, 10^3 Ω

b. 0.1 mA, 10^2 Ω

c. 10 mA, 10^2 Ω

d. 10 mA, 10^3 Ω

Question 3

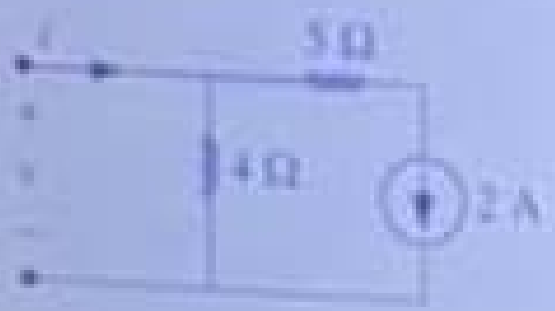
Not yet answered Marked out of 1.00 Flag question

In superposition theorem, in order to determine the response due to one voltage source, all the other voltage sources are _____

Question 10

Flag question

The KVL equation for the network shown below is given as



Select one:

- $v_1 = \frac{v_2}{4} + 2$
- $v_1 = 2$
- $v_1 = \frac{v_2}{10} + 2$
- $v_1 = \frac{v_2}{4} - 2$

Question 10

Testonline

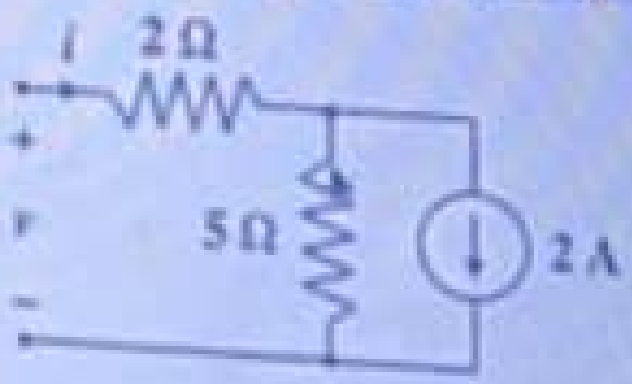
Home > My courses > [illegible]

Question 11

Not yet answered Marked out of 1.00

Flag question

The i-v law describing the network shown below is given as:



Select one:

- a. $i = \frac{v}{7} + \frac{10}{7}$
- b. $i = -\frac{v}{7} + \frac{10}{7}$
- c. $i = \frac{v}{7} - \frac{10}{7}$
- d. $i = \frac{-v}{7} - \frac{10}{7}$

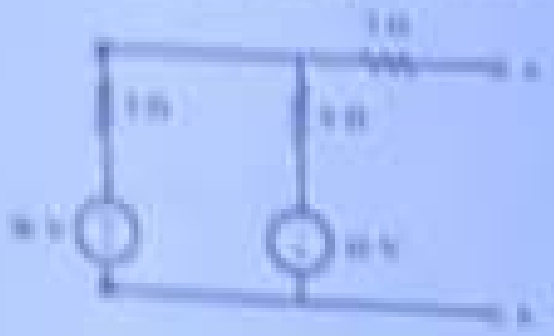
Question 12

Not yet answered Marked out of 1.00

Question 12

g' Flag question

The figure shown is the experimental setup for the validation of Thevenin's theorem. Based on measured data, the Thevenin equivalent circuit was found to be the same as the one connected to the voltage source and 5.8 Ω resistor. Compare the readings with the computed values.



Select one:

- a. 9.9 (V), 5.8 Ω
- b. 11.29, 5.8 Ω
- c. 10.86, 5.8 Ω
- d. 11 (V), 5.8 Ω

Question 13

g' Flag question

EEG211_QUIZ1_D

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Network connection restored. You may continue safely.

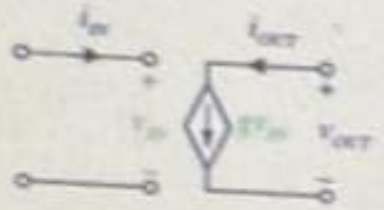
Question 1

Flag question

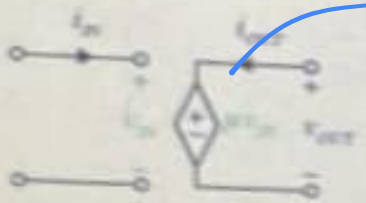
Identify a voltage controlled current source from the following

Select one:

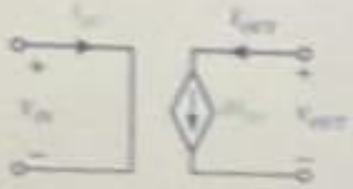
a.



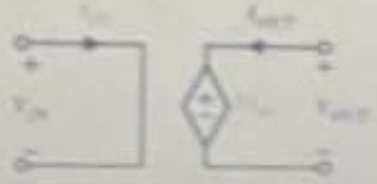
b.



c.



d.



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Announcements

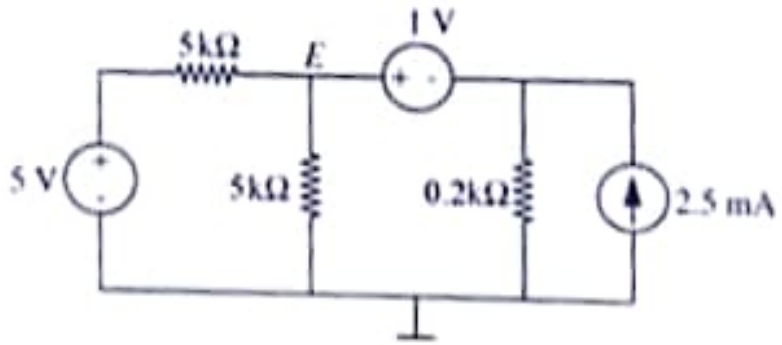
Question 6

Not yet answered

Marked out of 1.00

Flag question

Determine the node voltage E in the network shown below



Select one:

- a. $2.24\,V$
- b. $1.45\,V$
- c. $1.57\,V$
- d. $2.54\,V$

Question 7

Not yet answered

Marked out of 1.00

Flag question

Which of these characteristic equations represent a non-linear element?

c. 3.43 V

d. 4.57 V

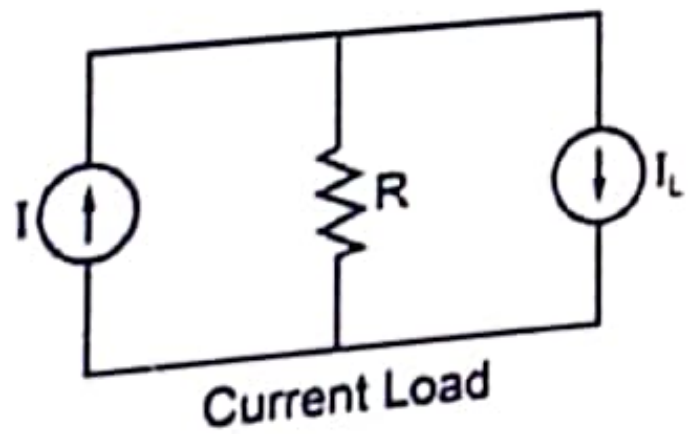
Question 2

Not yet answered

Marked out of 1.00

Flag question

Given that $I = 10\ A$, and $R = 10\ k\Omega$, determine the value of I_L that maximizes the power delivered to it.



Select one:

a. $I_L = 0.2\ mA$

b. $I_L = 0.3\ mA$

c. $I_L = 0.4\ mA$

d. $I_L = 0.5\ mA$

Question 3

Not yet answered

Marked out of 1.00

Flag question

17:15

arked out of 1.00

Flag question

In a circuit junction, three branch currents (I1=8A, I2=5A and I3=10A) converge. Calculate the total current flowing into the junction.

Select one:

- a. 23A
- b. 3A
- c. 10A
- d. 32A

Finish attempt ...

Jump to...

Quiz navigation

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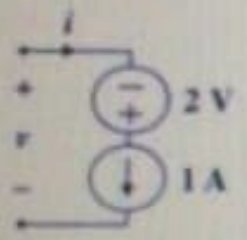
25	26						

Question 10

Not yet answered Marked out of 1.00

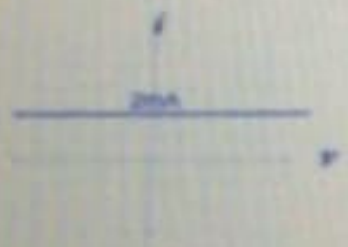
Flag question

Given the circuit below to analyse in the Lab, the I-V characteristics will be of the form:

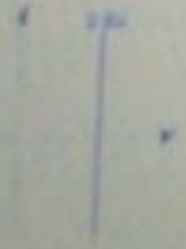


Select one:

a.



b.



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load in a network with ideal voltage and current sources?

Select one:

a. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are removed.

b. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are turned off.

c. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage source is replaced with short circuit while the current source is replaced with open circuit.

d. Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are replaced with short circuit.

Question 9

Not yet answered

Marked out of 1.00

Flag question

Kirchhoff's Current Law (KCL) obeys the conservation of _____?

Select one:

testonline.unilag.edu.ng/mod/quiz/attempt.php?attempt=65645&cmid=446&page=3

Coursera | Degrees... 200 Level SEES - Go... OWASP Top Ten | O... Play It Safe: Manage... Financial Aid | Cours... My Account

a. 2.5mJ, 2.5mJ

b. 0mJ, 2.5mJ

c. 5mJ, 5mJ

d. 0mJ, 2.5mJ

Question 17 Not yet answered Marked out of 1.00 Flag question

Given a 10V source with resistance R=20? in series with an inductor, L=40mH. When will the inductor be fully charged?

Select one:

a. 0.1s

b. 0.01s

c. 0.001s

d. 0.002s

Question 18 Not yet answered Marked out of 1.00 Flag question

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Question 21

Not yet answered Marked out of 1.00 Flag question

After 4 time constants; calculate the current in a RL circuit whose parameters are: R=25?, L=20H, I=40A, ó=30mS.

Select one:

- a. 0.15A
- b. 0.12A
- c. 0.008A
- d. 40A

Question 22

Not yet answered Marked out of 1.00 Flag question

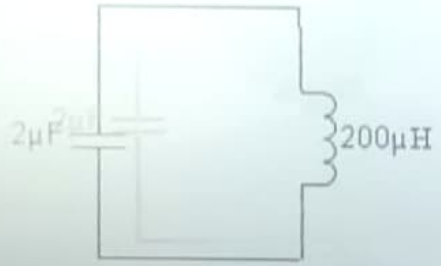
The energy in the transient decays to an approximate value of _____ in about _____ cycles.

Select one:

- a. 2%; Q

Question 5 Not yet answered Marked out of 1.00 Flag question

In the circuit shown below, suppose at some time t=to, the current flowing through the inductor was 1A while at the same time the voltage measured across the capacitor was 4 V, then the peak voltage across the capacitor and the peak current flow in the inductor will be_____ and _____.



Select one:

- a. **31.6 V** and 3.16A
- b. **10.77V** and 1.077A
- c. **14.142V** and 1.4142A
- d. **22.36V** and 2.236A

Question 11

Not yet answered Marked out of 1.00 Flag question

Consider a circuit which has two capacitors with equal charge. If prior to t=0s, capacitor C1=2μF is charged to 50V while capacitor C2=2μF has no charge. If the switch is closed at t=0s, calculate the total energy stored by both capacitors (W1, W2) after the switch is closed.

Select one:

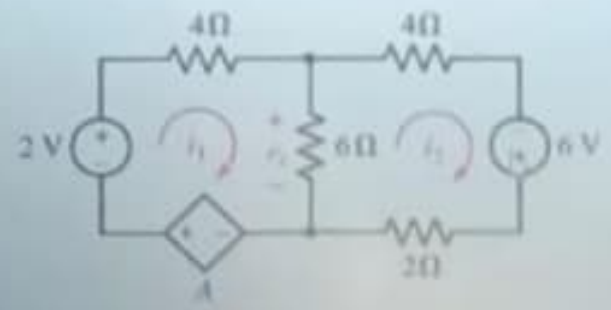
- a. 2.5mJ, 2.5mJ
- b. 0mJ, 2.5mJ
- c. 5mJ, 5mJ
- d. 0mJ, 2.5mJ

testonline.unilag.edu.ng/mod/quiz/attempt.php?attempt=65645&cmid=446&page=1

Question 10

Not yet answered Marked out of 1.00 Flag question

Determine the mesh current i_1 in the network shown below if the dependent source $A = 2i_1$



Select one:

- a. 1.10 A
- b. 1.45 A
- c. 1.50 A
- d. 1.00 A

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Proctor: Adequately position your webcam, please

Proctor: Better

Send

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Next

Request Attention

Question (24) (EE0231) :

Which of the following is true with respect to the load terminal in the measurement of Thevenin resistance in a network with ideal voltage and current sources?

- Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are removed.
- Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are turned off.
- Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage source is replaced with short circuit while the current source is replaced with open circuit.
- Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are replaced with short circuit.

00:22:52

Question List

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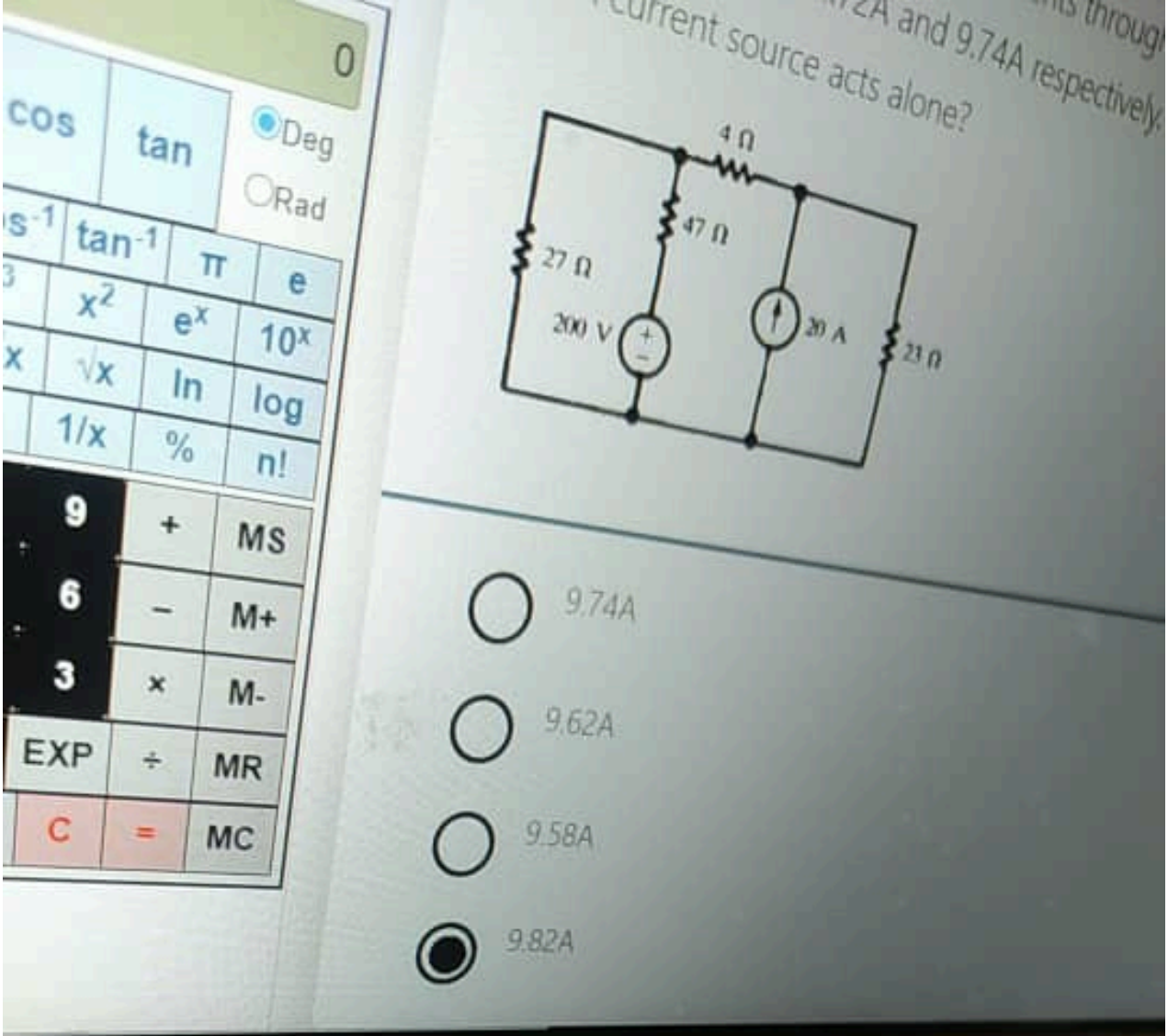
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40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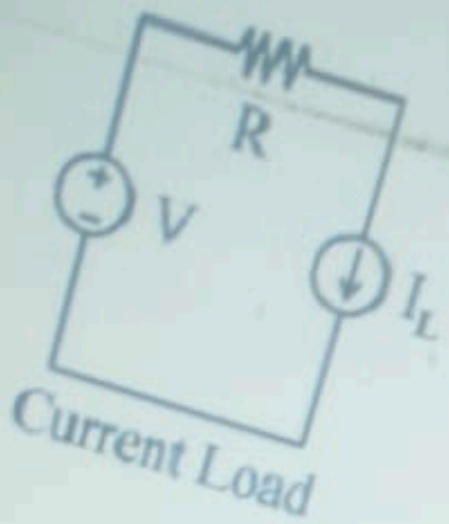
MC
2A and 9.74A respectively.
current source acts alone?
4 Ω
47 Ω
27 Ω
200 V
20 A
23 Ω
9.74A
9.62A
9.58A
9.82A

with a current source as s
delivered to the load.



- $P_{max} = \frac{V^2}{4R}$
- $P_{max} = \frac{V^2}{2R}$
- $P_{max} = \frac{V}{4R}$
- $P_{max} = \frac{V}{2R}$

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Request Attention

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Question List

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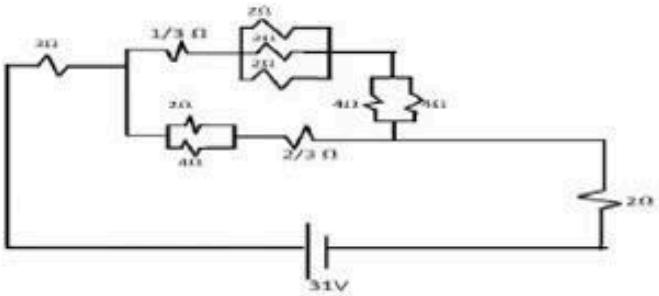
Question (8) (EEG231) :

Find the current, I.



- 8A
- 5A
- 3A

0

0

AC	(	)	/
1	2	3	x
4	5	6	+
7	8	9	-
0		.	=

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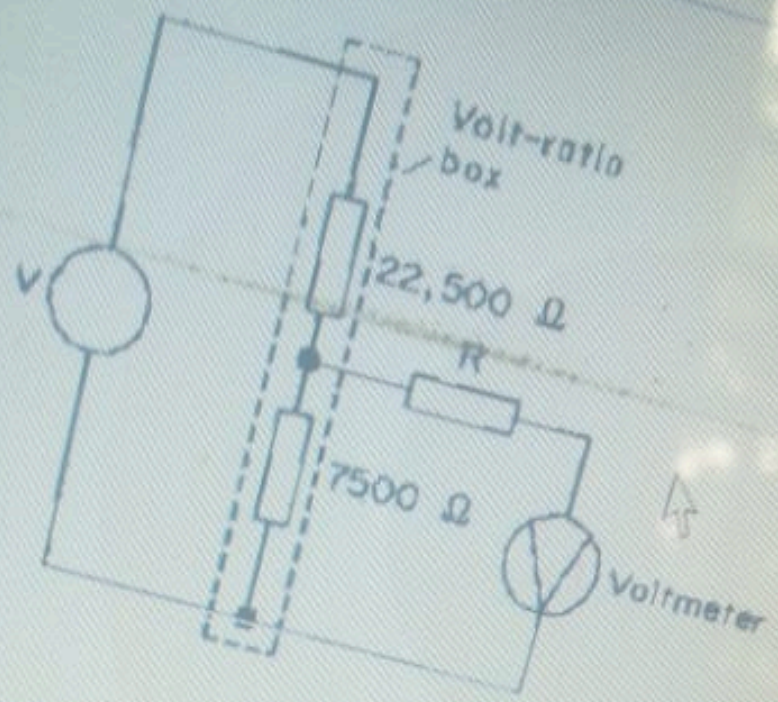

- 5619 Ω
- 5625 Ω
- 5723 Ω
- 5824 Ω

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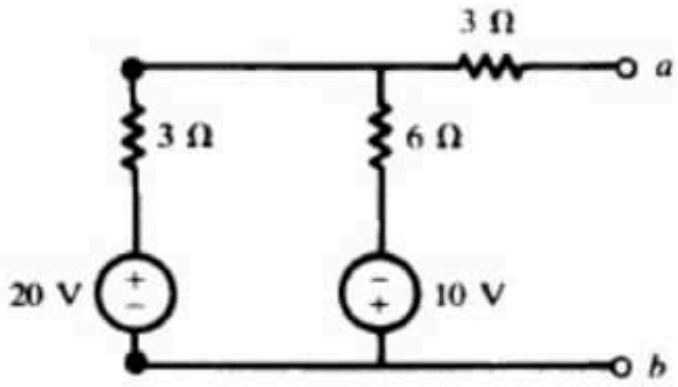
data, the Thevenin equivalent circuit was seen to be the same as the series connected 11.2V voltage source and 5.8 Ω resistor. What are the differences between the measured and computed data?



- 1.2V; 0.8 Ω
- 1.0V; 0.6 Ω
- 1.4V; 0.8 Ω
- 1.6V; 0.4 Ω

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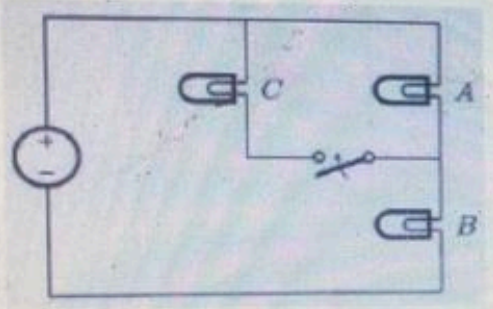
Question (7) (EEG231) :

Consider the circuit arrangement below comprising of a constant voltage source, 3 identical bulbs and a switch. Initially the switch is open, then it closes so that bulb C turns on. Assume that the bulbs are resistive and their brightness increases with their power dissipation. After the switch closes, A and B burn _____ respectively.



- Dimmer and Brighter
- Brighter and Dimmer
- Unchanged and Dimmer
- Dimmer and Unchanged

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Question List

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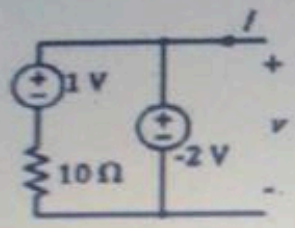
Question (16) (EEG231) :

Given the circuit below to analyse in the Lab, the I-V characteristics will be of the form



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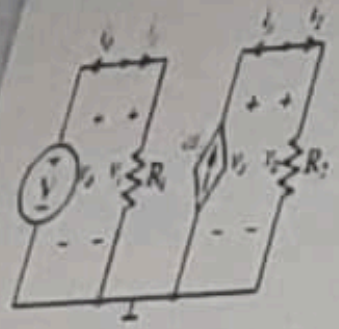
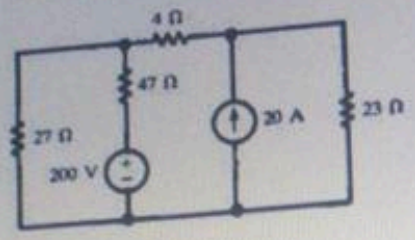
With the laboratory setup below, determine expressions for the branch variables associated with R_2.



- $i_2 = \frac{v_1}{R_1} = \frac{v_2}{R_2}$
- $i_2 = \frac{v_1}{R_1} = \frac{v_2}{R_2}$

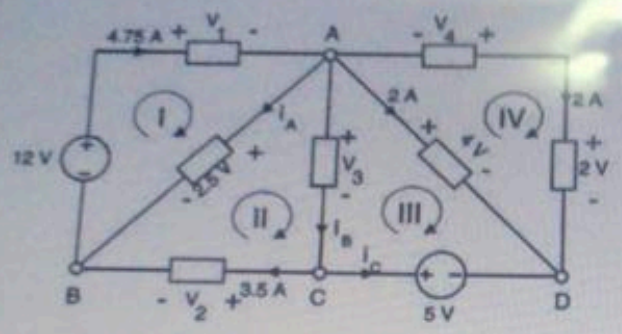
tion (7) (EEG231) :

It is given that the measured currents through the 23 Ω resistor when the 200V v
acted alone were 1.72A and 9.74A respectively. What is the computed total curre
20A current source acts alone?



- 9.74A
- 9.62A
- 9.58A

The circuit shown had been setup using the resistance decade boxes, single pole single throw (SPST) switc
supply and milliammeter. What is the computed voltage value V_1?



- 9.5V
- 3.5V
- -1V
- -2V

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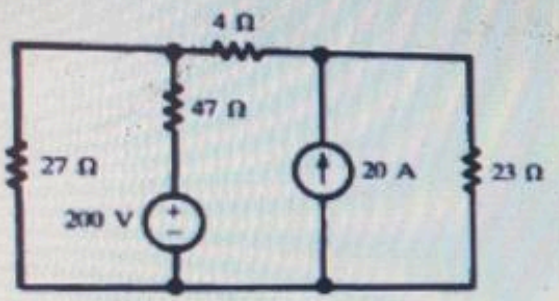
Question (2) (EEG231) :

The measured currents through the 23 Ω resistor when the 200V voltage source and 20A current source acted alone were 1.72A and 9.74A respectively. What is the computed total current through the 23 Ω resistor when the 200V voltage source acts alone?



- 1.72A
- 1.65A
- 1.59A
- 1.55A

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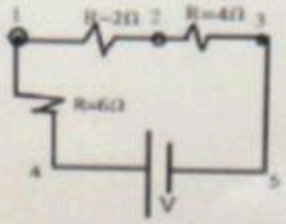
Question (19) (EEG231) :

Consider the circuit diagram which point has the least potential difference.



- (●) Point 1
- ( ) Point 2
- ( ) Point 3
- ( ) Point 4

Question List

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Question (1) (EEG231) :

If you connect 4 batteries in series each rated 12 V and 5.25 Ah, the combined source output would be

- ○ 48 V and 21 Ah
- ● 48 V and 5.25 Ah
- ○ 12 V and 21 Ah
- ○ 12 V and 5.25 Ah

Question (10) (EEG231) :

Which of the following is not correct?

- Ideal voltage source is one whose generated voltage is equal to the available voltage
- Ideal current source is one whose internal conductance is zero
- Ideal voltage source is one whose internal conductance is zero
- Ideal voltage source is one whose internal resistance is zero

C

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Question List

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

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A generator transfers maximum power to a load when:

- Load resistance is equal to zero
- Load resistance is greater than generator internal resistance
- Load resistance is less than the generator

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- Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are turned off.

- Thevenin resistance is measured from the terminal of the open load, looking into the original network when the

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Question (12) (EEG231) :

If you connect 4 batteries in series each rated 12 V and 5.25 Ah, the combined source output would be

- 48 V and 21 Ah

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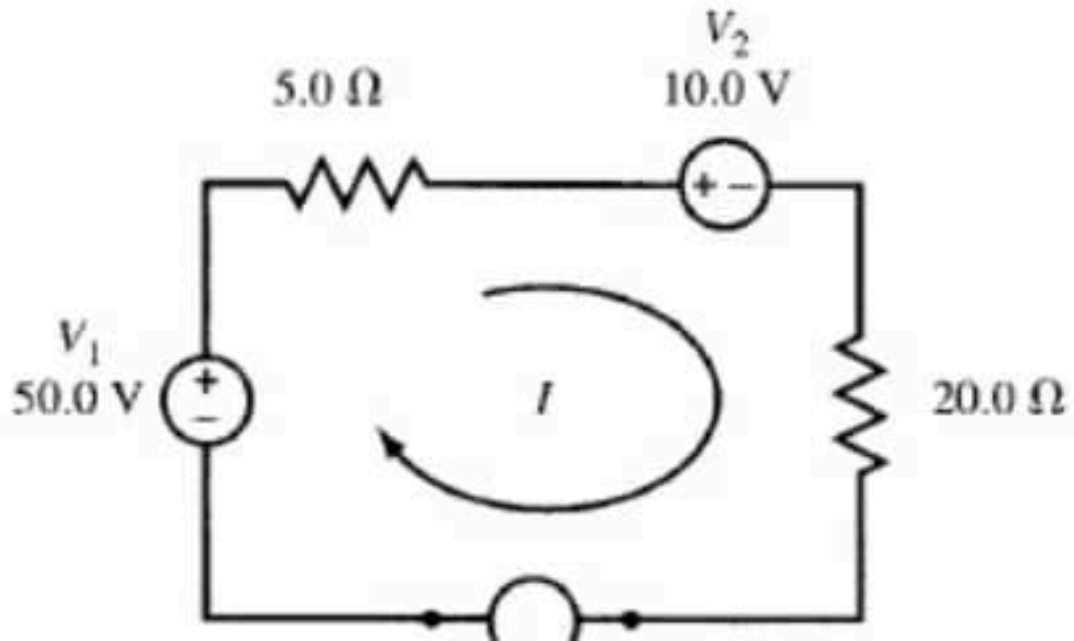
Given that the circuit shown had been setup using the resistance decade boxes, a single pole single throw (SPST) switch, power supply and milliammeter, if the measured voltage value V_3 is -28.8V, what is the computed value?



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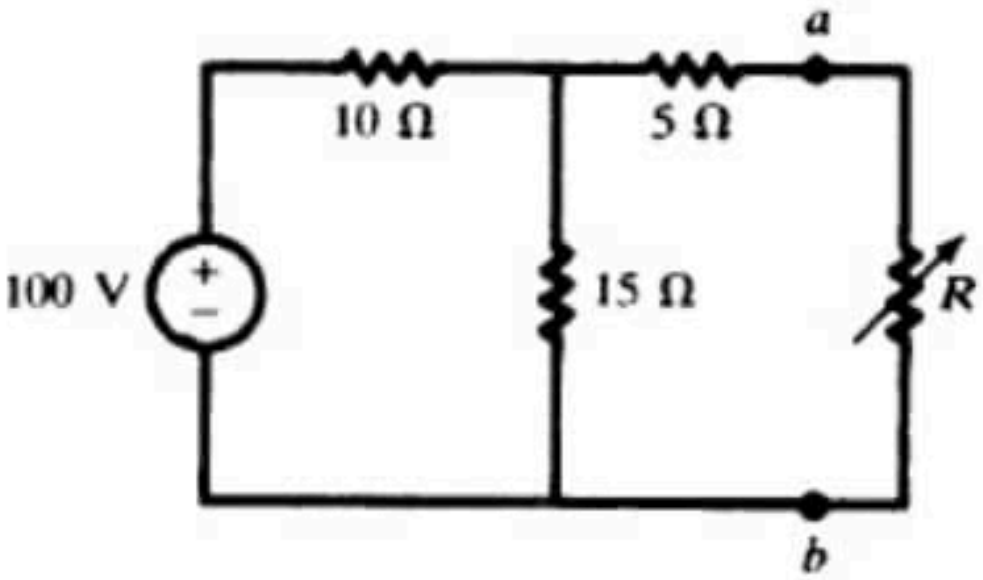
across the terminals ab of the circuit was 11.5 Ω. Deduce the computed values of R that will result in maximum power transfer and the maximum power transferred.



11.5 Ω; 78.26W

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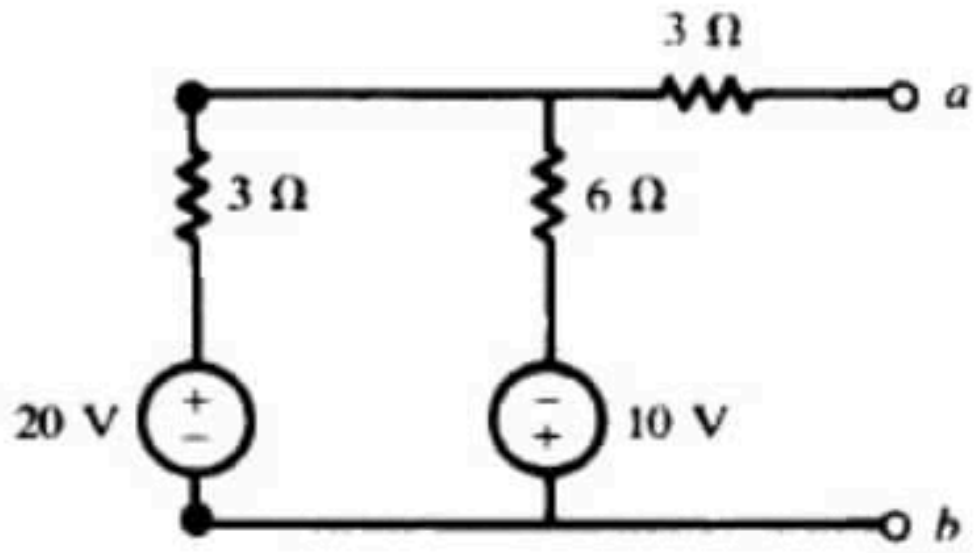
theorem. Based on measured data, the Thevenin equivalent circuit was seen to be the same as the series connected 11.2V voltage source and 5.8 Ω resistor. Compare the readings with the computed values.



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The figure shown is the experimental setup for the validation of Thevenin's theorem. Based on measured data, the Thevenin equivalent circuit was seen to be the same as the series connected 11.2V voltage source and 5.8 Ω resistor. Compare the readings with the computed values.

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- Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are removed.

- Thevenin resistance is measured from the terminal of the open load, looking into the original network

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Using the regulated variable dc supply, milliammeter, resistance decade boxes and two single pole single throw (SPST) switches in the circuit shown, the measured branch currents I_1, I_2, I_3, I_4, I_5 and I_6 were 0.91A, 1.23A, 2.33A, 11.40A, 3.88A and 7.60A respectively. If KCL holds, what are the computed current values?

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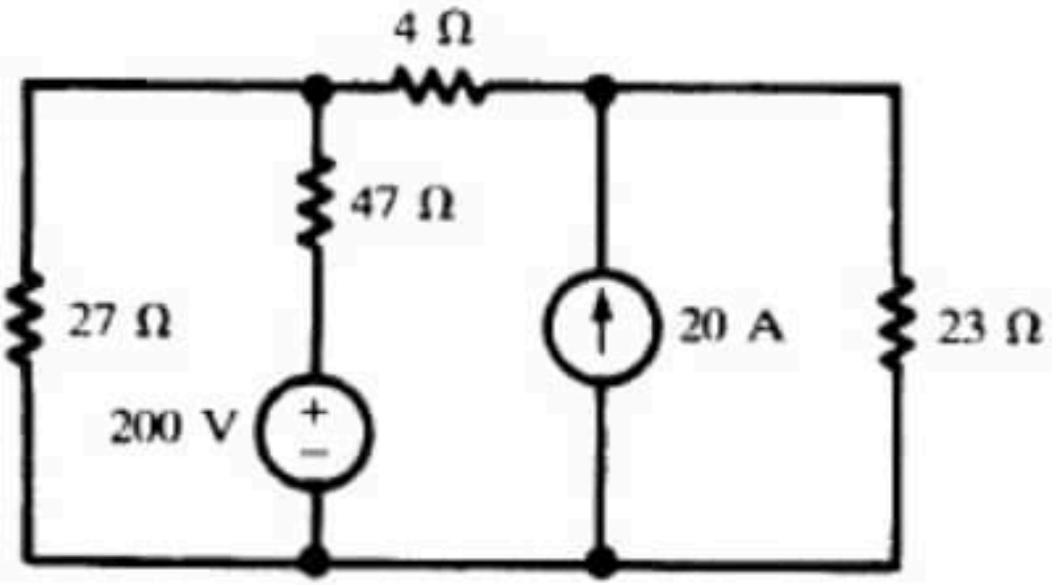
It is given that the measured currents through the 23 Ω resistor when the 200V voltage source and 20A current source acted alone were 1.72A and 9.74A respectively. What is the computed total current through the 23 Ω resistor when the sources act alone?



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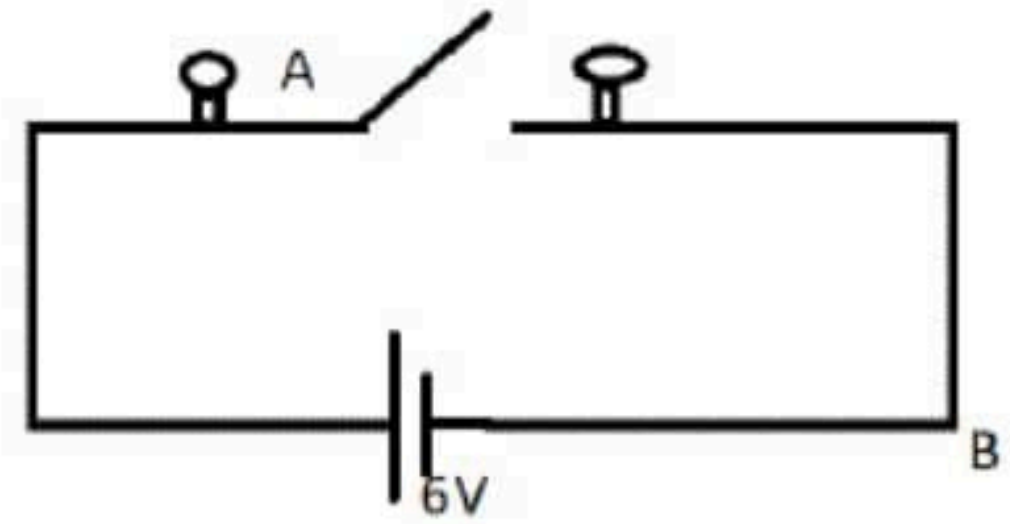
Question (16) (EEG231) :

Given a circuit, what happen if the switch is suddenly opened.



- Both lamps will go out
- Lamp A will remain bright
- Lamp B will remain out

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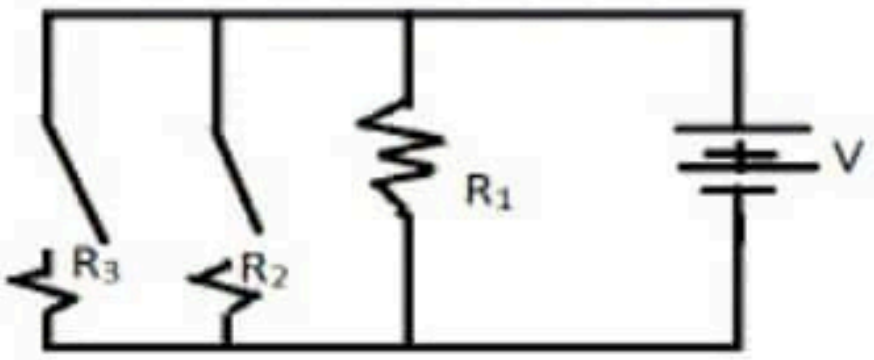
Question (19) (EEG231) :

What happens to the current flowing if one of the switches is closed?



- It will double
- It will be the same

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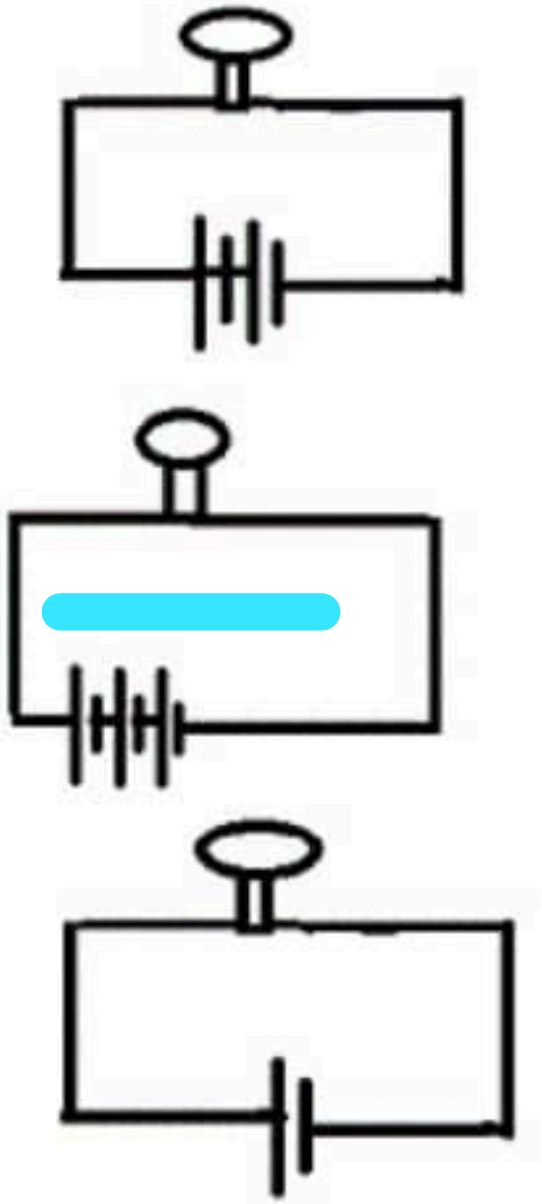
Given the diagrams below, which one has the brightest lamp.



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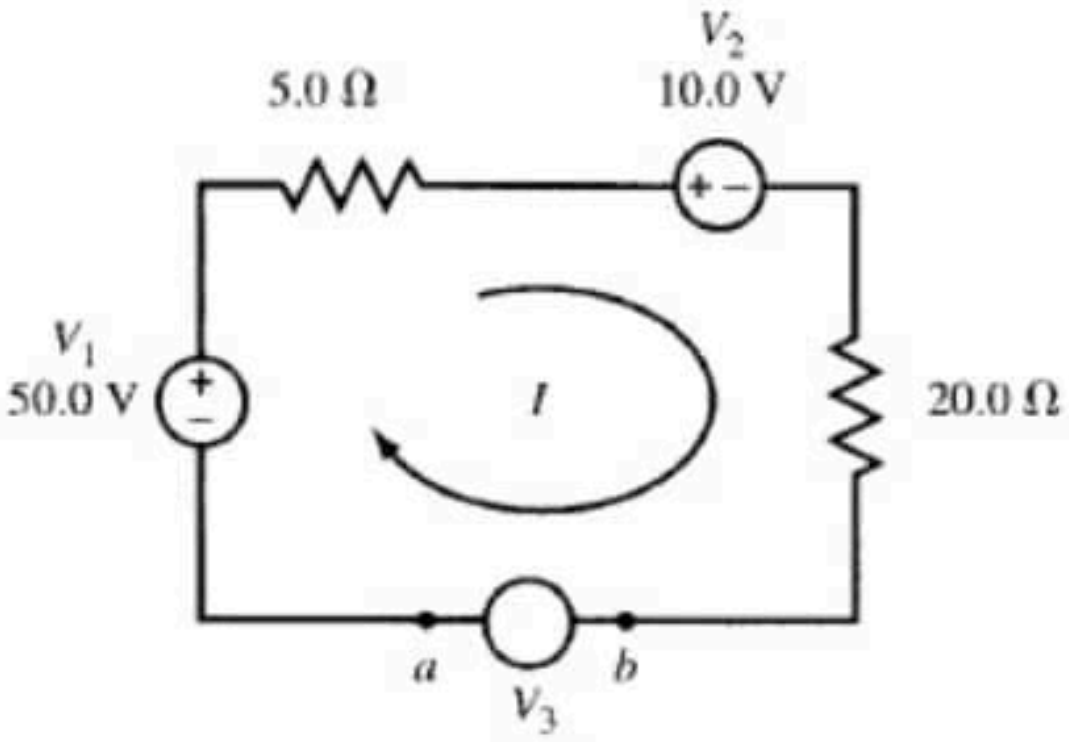
is the computed value?



- -28.8V
- -30.0V
- -32.0V
- -28.0V

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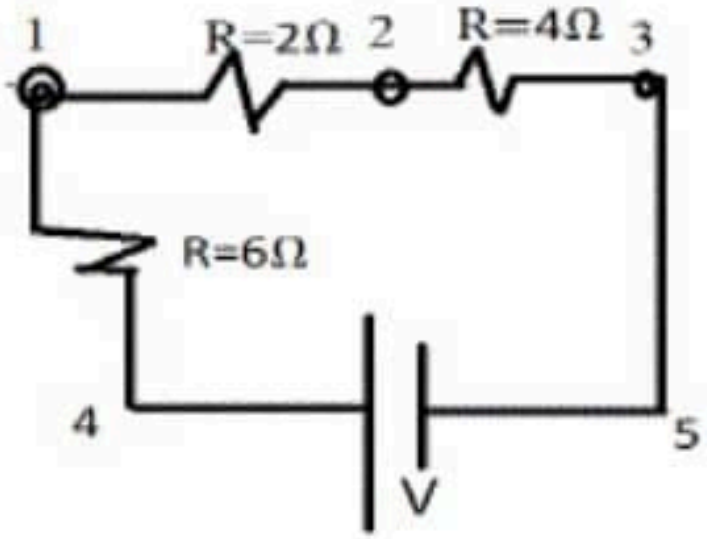
Consider the circuit diagram which point has the least potential difference.



- Point 1
- Point 2

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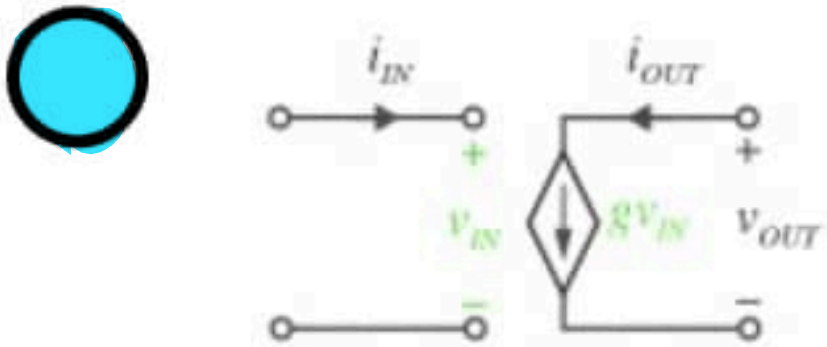
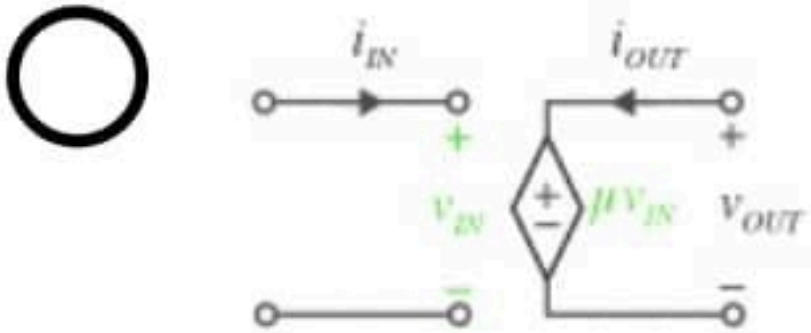
Question (14) (EEG231) :

Identify a voltage controlled current source from the following





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If you connect 4 batteries in parallel each rated 12 V and 5 Ah, the combined source output would be

- 48 V and 20 Ah
- 48 V and 5 Ah
- 12 V and 20 Ah

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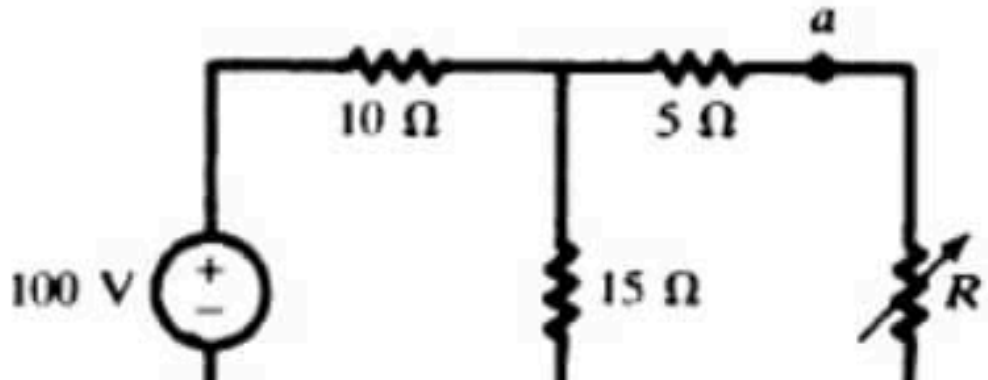
Given the experimental setup shown, the measured resistance that resulted in maximum power transfer across the terminals ab of the circuit was 11.5 Ω. Deduce the computed values of R that will result in maximum power transfer and the maximum power transferred.



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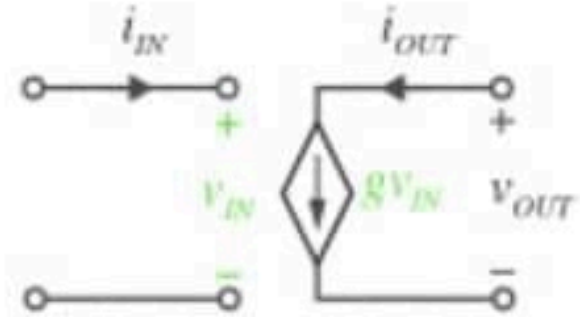

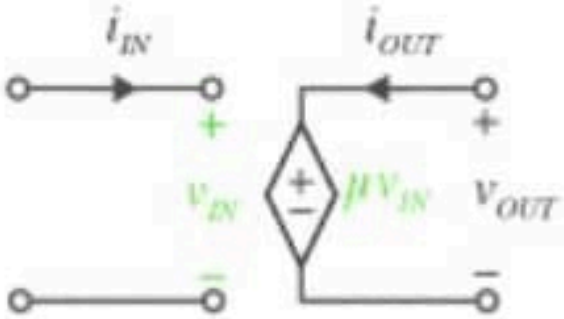

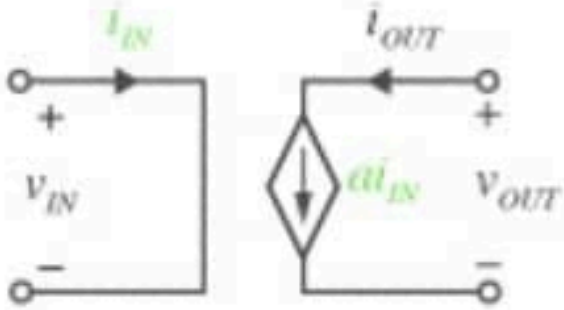

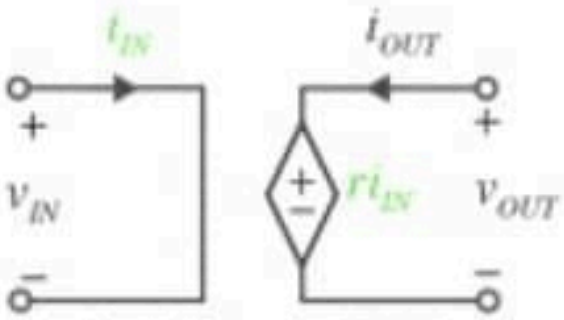

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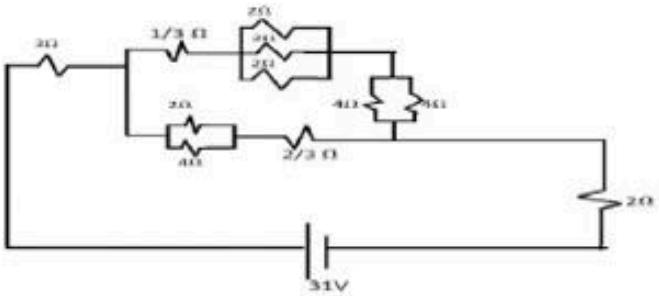
Question (8) (EEG231) :

Find the current, I.



- 8A
- 5A
- 3A

0

0

AC	(	)	/
1	2	3	x
4	5	6	+
7	8	9	-
0		.	=

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Question (6) (EEG231) :

If you connect 4 batteries in parallel each rated 12 V and 5 Ah, the combined source output would be

- ○ 48 V and 20 Ah
- ○ 48 V and 5 Ah
- ◉ 12 V and 20 Ah
- ○ 12 V and 5 Ah

0

0

AC	(	)	/
1	2	3	x
4	5	6	+
7	8	9	-
0		.	=

00:20:30

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0

0

AC ( ) /

1 2 3 x

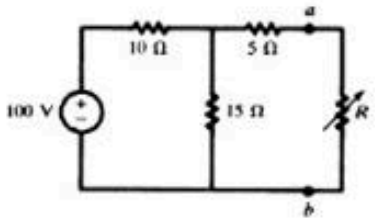
4 5 6 +

7 8 9 -

0 . =

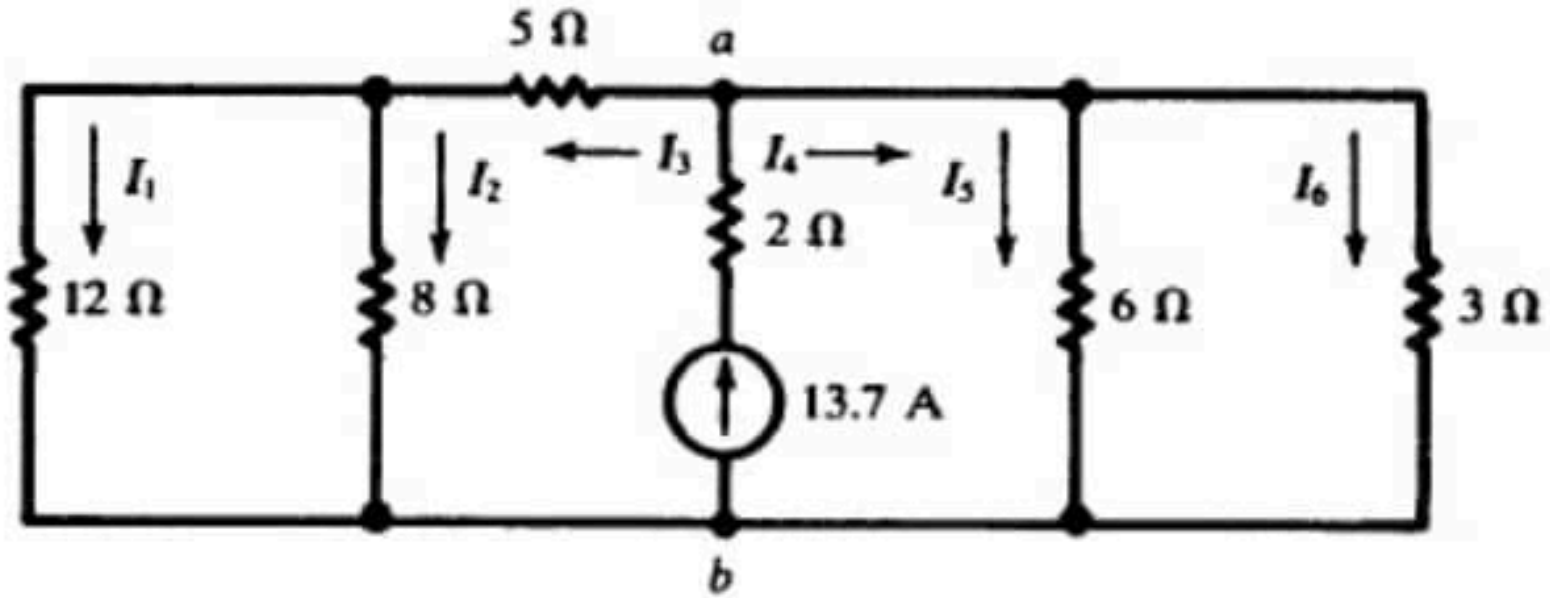
Question (1) (EEG231) :

Given the experimental setup shown, the measured resistance that resulted in maximum power transfer across the terminals ab of the circuit was 11.5 Ω. Deduce the computed values of R that will result in maximum power transfer and the maximum power transferred.



- 11.5 Ω 78.26W
- 12.0 Ω 75.00W
- 11.0 Ω 81.82W

68% 3:52 PM
proctee.webtest.ng/?company=unilagmain



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Question (16) (EEG231) :

A generator transfers maximum power to a load when:

- (●) Load resistance is equal to zero
- ( ) Load resistance is greater than generator internal resistance
- ( ) Load resistance is less than the generator internal resistance
- ( ) Load resistance equal to generator internal resistance

0

0

AC	(	)	/
1	2	3	x
4	5	6	+
7	8	9	-
0		.	=

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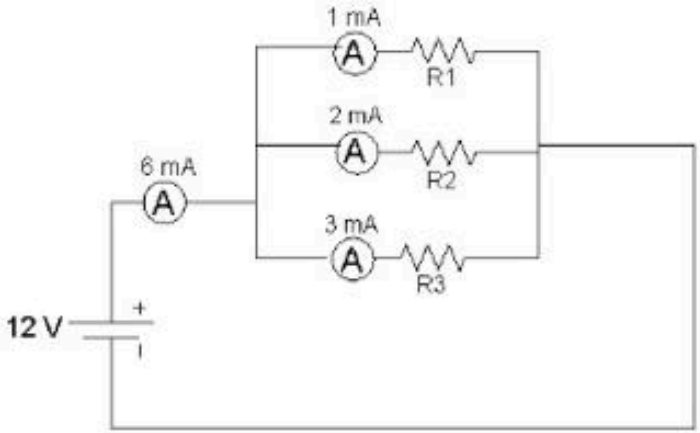
Question (5) (EEG231) :

In the network shown below, what is the value of R1, R2 and R3 respectively to obtain the ammeter readings shown in the branches?



- (●) 12 kΩ, 6 kΩ and 4 kΩ
- ( ) 15 kΩ, 10 kΩ and 5 kΩ

0

0

AC ( ) /

1 2 3 x

4 5 6 +

7 8 9 -

0 . =

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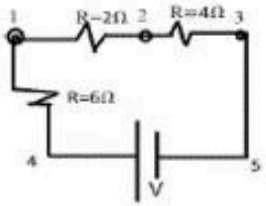
0
0
AC ( ) /
1 2 3 x
4 5 6 +
7 8 9 -
0 . =

Question (19) (EEG231) :

Consider the circuit diagram which point has the least potential difference.



- (●) Point 1
- ( ) Point 2
- ( ) Point 3
- ( ) Point 4

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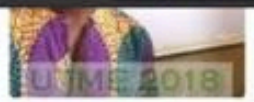


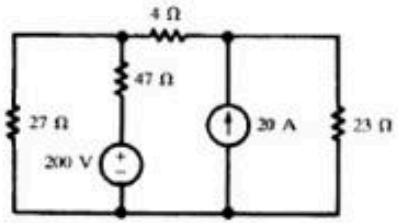
Request Attention

0
0

AC ( ) /
1 2 3 x
4 5 6 +
7 8 9 -
0 . =

Question (2) (EEG231) :

It is given that the measured currents through the 23 Ω resistor when the 200V voltage source and 20A current source acted alone were 1.72A and 9.74A respectively. What is the computed total current through the 23 Ω resistor when the sources act alone?



- 11.23A
- 11.46A
- 11.21A
- 11.37A

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Question (11) (EEG231) :

If you connect 4 batteries in series each rated 12 V and 5.25 Ah, the combined source output would be

- ○ 48 V and 21 Ah
- ◉ 48 V and 5.25 Ah
- ○ 12 V and 21 Ah
- ○ 12 V and 5.25 Ah

0

0

AC	(	)	/
1	2	3	x
4	5	6	+
7	8	9	-
0		.	=

00:12:58

Question List

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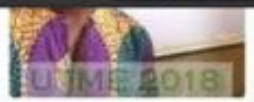


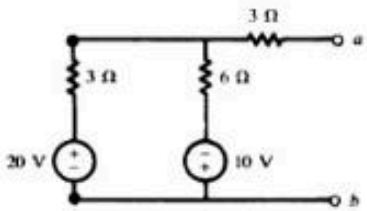
Request Attention

0
0

AC ( ) /
1 2 3 x
4 5 6 +
7 8 9 -
0 . =

Question (12) (EEG231) :

The figure shown is the experimental setup for the validation of Thevenin's theorem. Based on measured data, the Thevenin equivalent circuit was seen to be the same as the series connected 11.2V voltage source and 5.8 Ω resistor. Compare the readings with the computed values.



- 10.0V; 5.0 Ω
- 11.2V; 5.8 Ω
- 10.8V; 5.0 Ω
- 11.0V; 5.8 Ω

00:12:34

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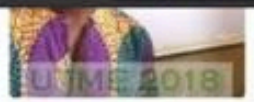

Request Attention

0

0

AC ( ) /

1 2 3 x

4 5 6 +

7 8 9 -

0 . =

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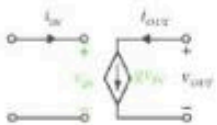
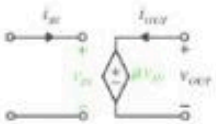
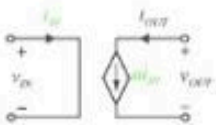
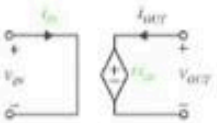
Question (9) (EEG231) :

Identify a voltage controlled current source from the following

- (●) 
- ( ) 
- ( ) 
- ( ) 

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0

0

AC ( ) /

1 2 3 x

4 5 6 +

7 8 9 -

0 . =

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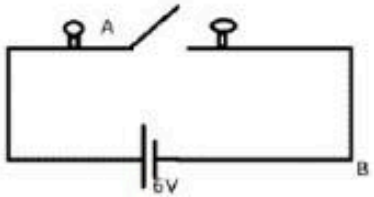
Question (10) (EEG231) :

Given a circuit, what happen if the switch is suddenly opened.



- Both lamps will go out
- Lamp A will remain bright
- Lamp B will remain out
- Both lamps remain bright

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0

0

AC ( ) /

1 2 3 x

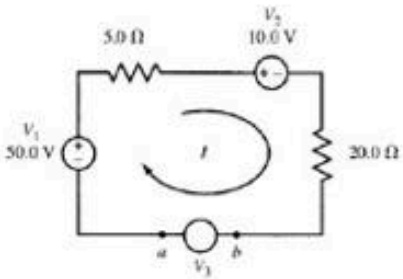
4 5 6 +

7 8 9 -

0 . =

Question (18) (EEG231) :

Given that the circuit shown had been setup using the resistance decade boxes, a single pole single throw (SPST) switch, power supply and milliammeter, if the measured voltage value V_3 is -28.8V, what is the computed value?



- -28.8V
- -30.0V
- -32.0V

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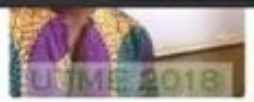

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0

AC ( ) /

1 2 3 x

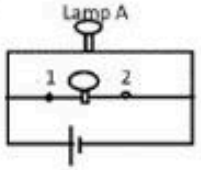
4 5 6 +

7 8 9 -

0 . =

Question (20) (EEG231) :

What happens to the lamp between terminals 1 and 2; if Lamp A is suddenly removed from the circuit.



- It will become dimmer
- It will become brighter
- It will remain the same in brightness
- It becomes dimmer slightly

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Question (7) (EEG231) :

Which of the following is not correct?

- Ideal voltage source is one whose generated voltage is equal to the available voltage
- Ideal current source is one whose internal conductance is zero
- Ideal voltage source is one whose internal conductance is zero
- Ideal voltage source is one whose internal resistance is zero

0

0

AC	(	)	/
1	2	3	x
4	5	6	+
7	8	9	-
0		.	=

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Question (17) (EEG231) :

Which of the following is true in the measurement of Thevenin resistance across the load in a network with ideal voltage and current sources?

- ○ Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are removed.
- ● Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are turned off.
- ○ Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage source is replaced with short circuit while the current source is replaced with open circuit.
- ○ Thevenin resistance is measured from the terminal of the open load, looking into the original network when the voltage and current sources are replaced with short circuit.

0

0

AC ( ) /

1 2 3 x

4 5 6 +

7 8 9 -

0 . =

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0

0

AC ( ) /

1 2 3 x

4 5 6 +

7 8 9 -

0 . =

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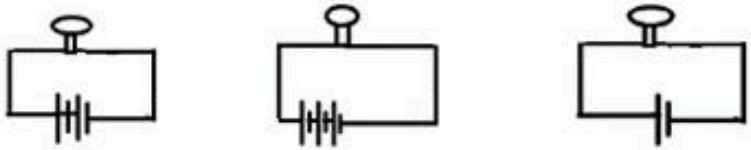
Question (3) (EEG231) :

Given the diagrams below, which one has the brightest lamp.



- Lamp 1
- Lamp 2
- Lamp 3
- All lamps have equal brightness

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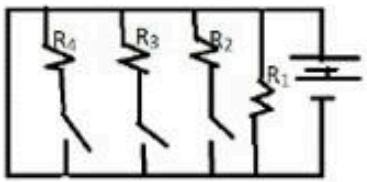
Question (14) (EEG231) :

What happens to total resistance if the switches are all closed?



- ○ Total resistance would double
- ◉ Total resistance would be halved
- ○ Total resistance would reduce
- ○ Total resistance would add all resistances

0

0

AC	(	)	/
1	2	3	x
4	5	6	+
7	8	9	-
0		.	=

Question (19) (EEG231) :

A generator transfers maximum power to a load when:

- Load resistance is equal to zero
- Load resistance is greater than generator internal resistance
- Load resistance is less than the generator internal resistance
- Load resistance equal to generator internal resistance

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Question List

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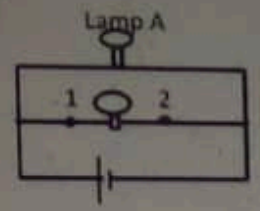
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Question (17) (EEG231) :

What happens to the lamp between terminals 1 and 2; if Lamp A is suddenly removed from the circuit.



- It will become dimmer
- It will become brighter
- It will remain the same in brightness
- It becomes dimmer slightly

00:25:19

Question List

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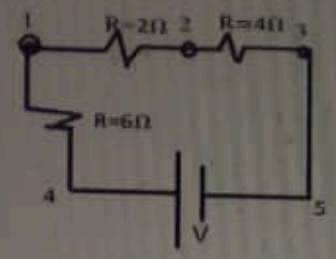
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Question (12) (EEG231) :

Consider the circuit diagram which point has the least potential difference.



- Point 1
- Point 2
- Point 3
- Point 4

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Question (10) (EEG231) :

Which of the following is not correct?

- Ideal voltage source is one whose generated voltage is equal to the available voltage
- Ideal current source is one whose internal conductance is zero
- Ideal voltage source is one whose internal conductance is zero
- Ideal voltage source is one whose internal resistance is zero

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

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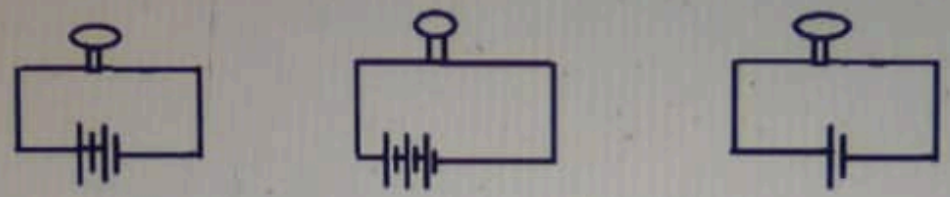
Question (11) (EEG231) :

Given the diagrams below, which one has the brightest lamp.



- Lamp 1
- Lamp 2
- Lamp 3
- All lamps have equal brightness

00:26

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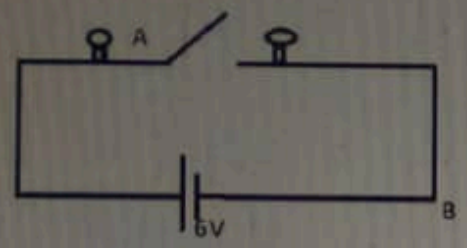
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Question (13) (EEG231) :

Given a circuit, what happen if the switch is suddenly opened.



- Both lamps will go out
- Lamp A will remain bright
- Lamp B will remain out
- Both lamps remain bright

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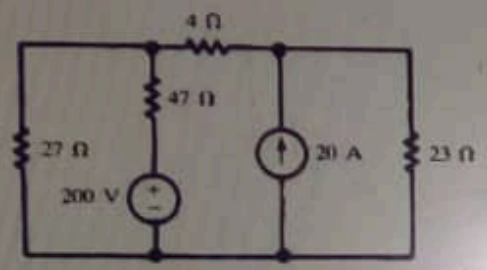
Question (7) (EEG231) :

It is given that the measured currents through the 23 Ω resistor when the 200V voltage source and 20A current source acted alone were 1.72A and 9.74A respectively. What is the computed total current through the 23 Ω resistor when the sources act alone?

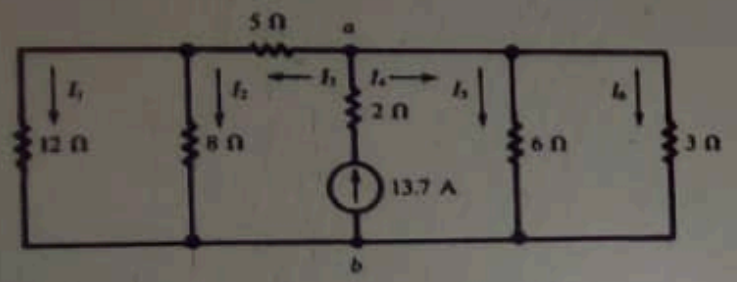


- 11.23A
- 11.46A
- 11.21A
- 11.37A

Question List

Question (18) (EEG231) :

Using the regulated variable dc supply, milliammeter, resistance decade boxes and two single pole single throw (SPST) switches in the circuit shown, the measured branch currents I_1, I_2, I_3, I_4, I_5 and I_6 were 0.91A, 1.23A, 2.33A, 11.40A, 3.88A and 7.60A respectively. If KCL holds, what are the computed current values?



- 0.91A, 1.23A, 2.33A, 11.40A, 3.88A, 7.60A
- 0.93A, 1.39A, 2.32A, 11.38A, 3.79A, 7.59A
- 0.90A, 1.33A, 2.33A, 11.40A, 3.80A, 7.60A
- 0.93A, 1.38A, 2.33A, 11.37A, 3.87A, 7.59A

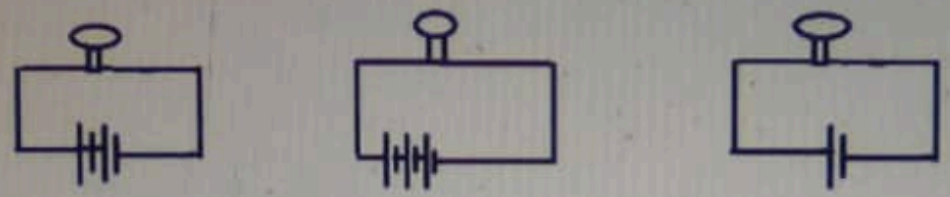
00:25:55

Question List

Question (11) (EEG231) :

Request Attention

Given the diagrams below, which one has the brightest lamp.



- Lamp 1
- Lamp 2
- Lamp 3
- All lamps have equal brightness

00:26

Question List

← Previous

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Question (10) (EEG231) :

Which of the following is not correct?

- Ideal voltage source is one whose generated voltage is equal to the available voltage
- Ideal current source is one whose internal conductance is zero
- Ideal voltage source is one whose internal conductance is zero
- Ideal voltage source is one whose internal resistance is zero

00:26:23

Question List

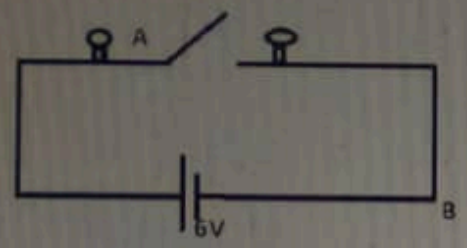
Next

Previous

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Question (13) (EEG231) :

Given a circuit, what happen if the switch is suddenly opened.



- Both lamps will go out
- Lamp A will remain bright
- Lamp B will remain out
- Both lamps remain bright

00:25:43

Question List

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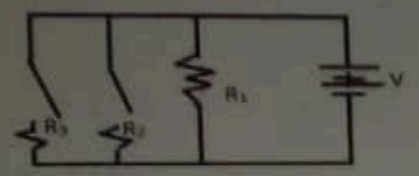
Finish/Submit

Question (20) (EEG231) :

What happens to the current flowing if one of the switches is closed?



- It will double
- It will be the same
- It will split into two branches
- It splits equally into two branches

00:25:04

Question List

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Finish/Submit

Question (19) (EEG231) :

A generator transfers maximum power to a load when:

- Load resistance is equal to zero
- Load resistance is greater than generator internal resistance
- Load resistance is less than the generator internal resistance
- Load resistance equal to generator internal resistance

00:25:10

Question List

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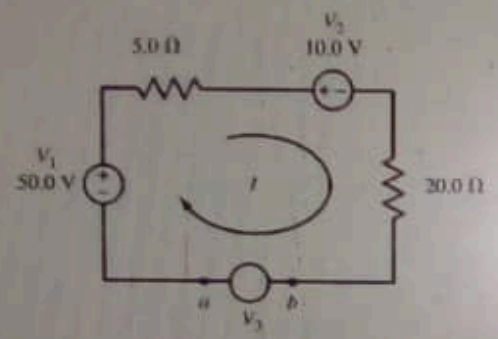
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

← Previous

Request Attention

Question (6) (EEG231) :

Given that the circuit shown had been setup using the resistance decade boxes, a single pole single throw (SPST) switch, power supply and milliammeter, if the measured voltage value v_3 is -28.8V, what is the computed value?



- -28.8V
- -30.0V
- -32.0V
- -28.0V

Question List

Question (15) (EEG231) :

If you connect 4 batteries in series each rated 12 V and 5.25 Ah, the combined source output would be

- 48 V and 21 Ah
- 48 V and 5.25 Ah
- 12 V and 21 Ah
- 12 V and 5.25 Ah

00:25:53

Question List

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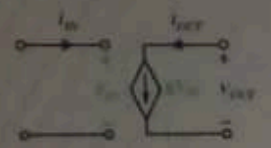
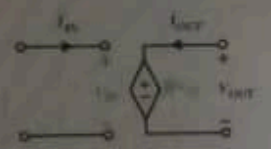
→ Next

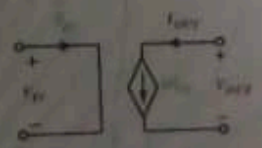
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

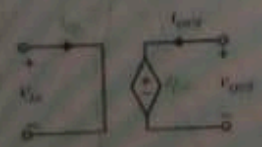
Question (8) (EEG231) :

Identify a voltage controlled current source from the following









Question List

- Ideal voltage source is one whose generated voltage is equal to the available voltage
- Ideal current source is one whose internal conductance is zero
- Ideal voltage source is one whose internal conductance is zero
- Ideal voltage source is one whose internal resistance is zero

Question List

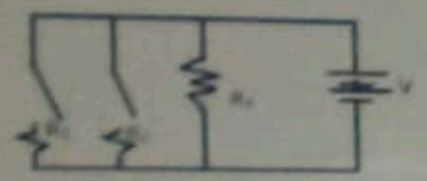
← Previous

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Finish Submit

Question (20) (EEG231) :

What happens to the current flowing if one of the switches is closed?



- It will double
- It will be the same
- It will split into two branches
- It splits equally into two branches

00:23:06

Question List

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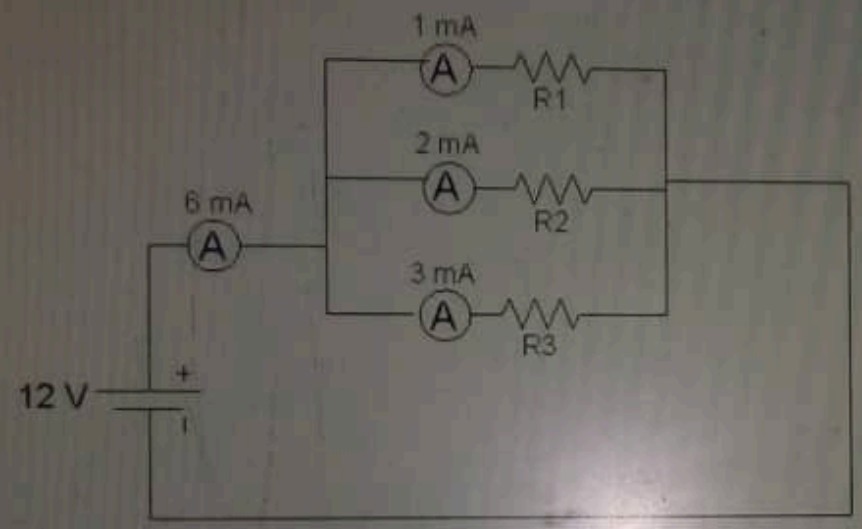
Finish Submit

Question (14) (EEG231) :

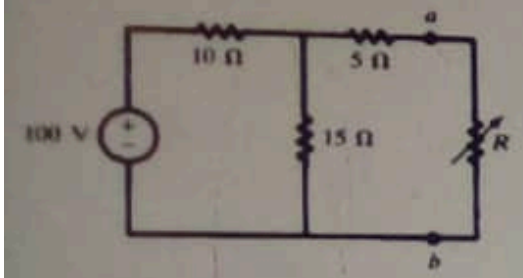
In the network shown below, what is the value of R1, R2 and R3 respectively to obtain the ammeter readings shown in the branches?



- 12 kΩ, 6 kΩ and 4 kΩ
- 15 kΩ, 10 kΩ and 5 kΩ
- 9 kΩ, 6 kΩ and 3 kΩ
- 12 kΩ, 8 kΩ and 4 kΩ

Question (16) (EEG231) :

Given the experimental setup shown, the measured resistance that resulted in maximum power transfer across the terminals *ab* of the circuit was 11.5 Ω. Deduce the computed values of R that will result in maximum power transfer and the maximum power transferred.



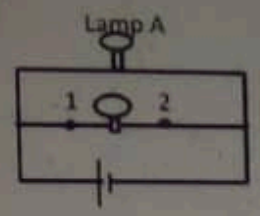
- 11.5 Ω 78.26W
- 12.0 Ω 75.00W
- 11.0 Ω 81.82W
- 12.5 Ω 72.00W

00:25:25

Question List

Question (17) (EEG231) :

What happens to the lamp between terminals 1 and 2; if Lamp A is suddenly removed from the circuit.



- It will become dimmer
- It will become brighter
- It will remain the same in brightness
- It becomes dimmer slightly

00:25:19

Question List

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Question (5) (EEG231) :

If you connect 4 batteries in parallel each rated 12 V and 5 Ah, the combined source output would be

- 48 V and 20 Ah
- 48 V and 5 Ah
- 12 V and 20 Ah
- 12 V and 5 Ah

00:27:19

Question List

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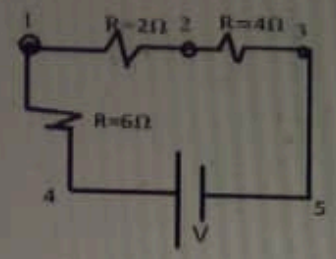
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Question (12) (EEG231) :

Consider the circuit diagram which point has the least potential difference.



- Point 1
- Point 2
- Point 3
- Point 4

Question List

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QUESTION 4

a. State the (i) Thevenin and (ii) Norton theorem [2 marks]

b. Using Source transformations obtain an expression for the voltage v in the circuit of Figure Q4a. [7 marks]

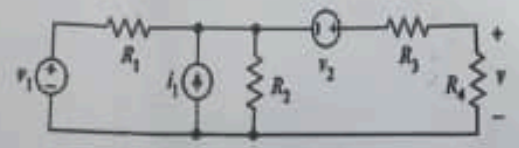

Figure Q4a.

c. Obtain the Thevenin equivalent for the circuit of Figure Q4b at the terminals a–b. [4 marks]

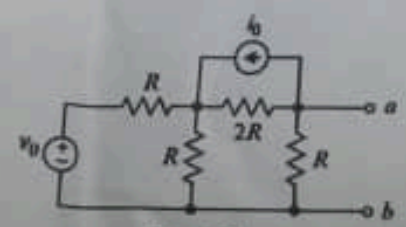

Figure Q4b.

d. Obtain the Norton equivalent for the circuit of Figure Q4b at the terminals a–b. [2 marks]

QUESTION 5

a. State the superposition theorem [1 mark]

b. State the steps in implementing Superposition theorem [2 marks]

c. Determine the equivalent resistance R_{ab} looking into the circuit of Figure Q5b. [4 marks]

d. Using the theorem in 5(a) calculate the voltage across terminal a-b (R_{ab}) in the circuit of Figure Q5b. [8 marks]

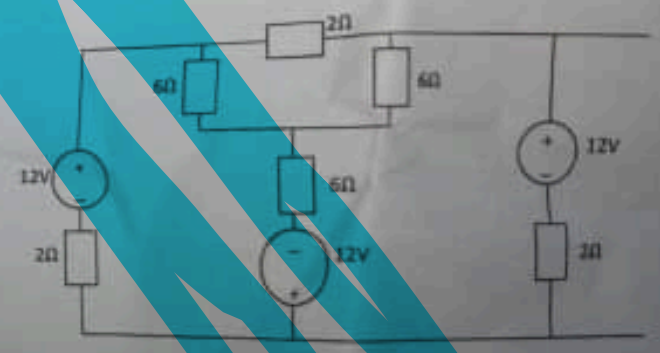

Figure Q5b.