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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Basic Electrical Circuits (course)

Announcements (announcements) About the Course (preview) Ask a Question (forum) Progress (student/home) Mentor (student/mentor)

Unit 8 - Week 6: More circuit theorems; Two port parameters

Course outline

How does an NPTEL online course work?

Week 0

Week 1: Preliminaries; Current and voltage; Electrical elements and circuits; Kirchhoff's laws; Basic elements; Linearity

Week 2: Elements in series and parallel; Controlled sources

Week 3: Power and energy in electrical elements; Circuit analysis methods

Week 4: Nodal analysis

Week 5 : Mesh analysis; Circuit theorems

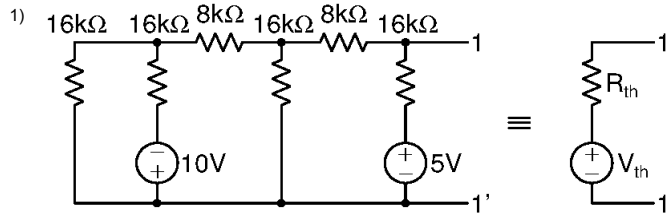
Week 6: More circuit theorems; Two port parameters

- Extensions to Superposition and Substitution theorem (unit?unit=18&lesson=95)
- Thevenin's theorem (unit?unit=18&lesson=96)
- Worked out example: Thevenin's theorem (unit?unit=18&lesson=97)
- Norton's theorem (unit?unit=18&lesson=98)
- Worked out example: Norton's theorem (unit?unit=18&lesson=99)
- Maximum power transfer theorem (unit?unit=18&lesson=100)
- Preliminaries (unit?unit=18&lesson=101)
- Two port parameters (unit?unit=18&lesson=102)
- y parameters (unit?unit=18&lesson=104)
- y parameters: Examples (unit?unit=18&lesson=103)
- Week 6 Lecture material (unit?unit=18&lesson=188)

Assignment 6

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2020-10-28, 23:59 IST.



Determine the voltage V_{th} in the circuit above.

(The answer must be in volts (V). Round off fractional answers to two decimal places.)

No, the answer is incorrect. Score: 0
Accepted Answers: (Type: Range) 1.15,1.35

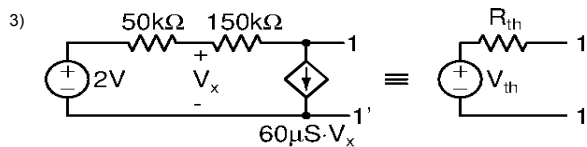
1 point

2) Determine the resistance R_{th} in the circuit above.

(The answer must be in kilohms (kΩ). Round off fractional answers to one decimal place.)

No, the answer is incorrect. Score: 0
Accepted Answers: (Type: Range) 7.8,8.2

1 point



Determine the voltage V_{th} in the circuit above.

(The answer must be in volts (V). Round off fractional answers to one decimal place.)

Basic Electrical Circuits :
Week 6 Feedback Form
(unit?unit=18&lesson=199)

Quiz : Assignment 6
(assessment?name=217)

Assignment 6 solutions (unit?
unit=18&lesson=222)

Week 7: Two port
parameters continued;
Reciprocity in resistive
networks

Week 8: Opamp and
negative feedback; Example
circuits and additional
topics

Week 9 :First Order Circuits

Week 10 : First order circuits
with time-varying inputs

Week 11: Second order
system response

Week 12: Direct calculation
of steady state response
from equivalent components

Text Transcripts

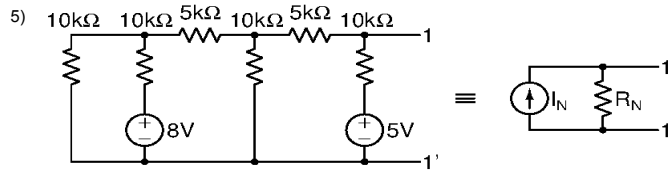
Download Videos

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) -4.2,-3.8

4) A positive resistance R_L is connected to the circuit above at 1-1'. What should be the value of R_L such that the maximum possible power is dissipated in it?

(The answer must be in kilohms ($k\Omega$). Round off fractional answers to one decimal place.)

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 49.5,50.5



Determine the current I_N in the circuit above.

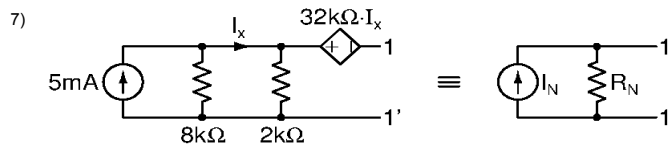
(The answer must be in milliamperes (mA). Round off fractional answers to one decimal place.)

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 0.6,0.8

6) Determine the Norton equivalent resistance R_N in the circuit above.

(The answer must be in kilohms ($k\Omega$). Round off fractional answers to one decimal place.)

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 4.9,5.1



Determine the current I_N in the circuit above.

(The answer must be in milliamperes (mA). Round off fractional answers to one decimal place.)

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) -15.5,-14.5

1 point

1 point

1 point

1 point

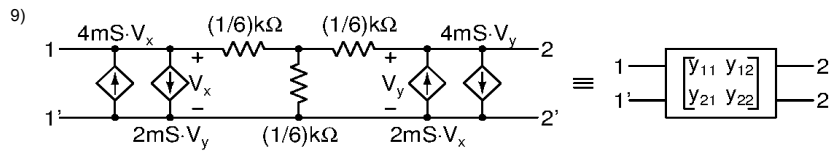
1 point

- 8) A positive resistance R_L is connected to the circuit above at 1-1'. What should be the value of R_L such that the maximum possible power is dissipated in it?

(The answer must be in kilohms ($k\Omega$). Round off fractional answers to one decimal place.)

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 7.8,8.2

1 point



Determine the y parameters of the circuit above. y_{ij} 's are the numerical values of the y-parameters in millisiemens (mS).

e.g. For the matrix: $\begin{bmatrix} 2 \text{ mS} & 1 \text{ mS} \\ -1 \text{ mS} & 0 \end{bmatrix}$,
 $y_{11} = 2; y_{12} = 1; y_{21} = -1; y_{22} = 0;$
 $y_{12} \times y_{21} = -1$

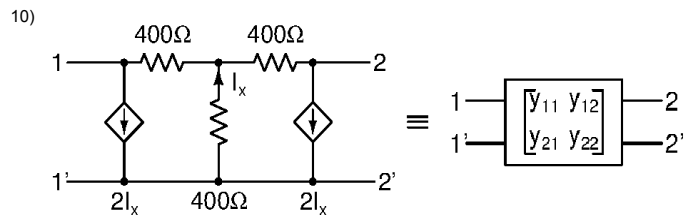
The answer is the value of the expression given below:

$$y_{11} + y_{12} + (y_{21} \times y_{22})$$

(Round off fractional answers to one decimal place.)

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) -32.5,-31.5

1 point



Determine the y parameters of the circuit above.
 y_{ij} 's are the numerical values of the y-parameters
 in **millisiemens (mS)**.

e.g. For the matrix: $\begin{bmatrix} 2 \text{ mS} & 1 \text{ mS} \\ -1 \text{ mS} & 0 \end{bmatrix}$,

$y_{11} = 2; y_{12} = 1; y_{21} = -1; y_{22} = 0;$
 $y_{12} \times y_{21} = -1$

The answer is the value of the expression given
 below:

$$y_{12} + y_{21} + (y_{11} \times y_{22})$$

(Round off fractional answers to one decimal place.)

No, the answer is incorrect.
 Score: 0
 Accepted Answers:
 (Type: Range) -5.5,-4.5

1 point