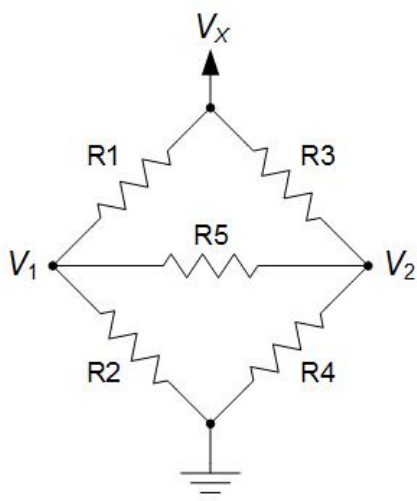


Started on	Monday, 18 July 2022, 7:58 PM
State	Finished
Completed on	Monday, 18 July 2022, 8:47 PM
Time taken	48 mins 30 secs
Grade	8.0 out of 10.0 (80%)

Question 1

Correct

Mark 1.0 out of 1.0



For the bridge circuit shown, what must the value of R_4 be in kilohms to set V_{12} , the voltage across R_5 , equal to zero? (Hint: Use Thevenin equivalents to solve this problem more easily.) Use: $V_x = 1.1\text{V}$, $R_1 = 8.5\text{k}\Omega$, $R_2 = 6.1\text{k}\Omega$, $R_3 = 5.3\text{k}\Omega$, $R_4 = 3.9\text{k}\Omega$ and $R_5 = 2.5\text{k}\Omega$.

Answer:



The correct answer is: 3.80

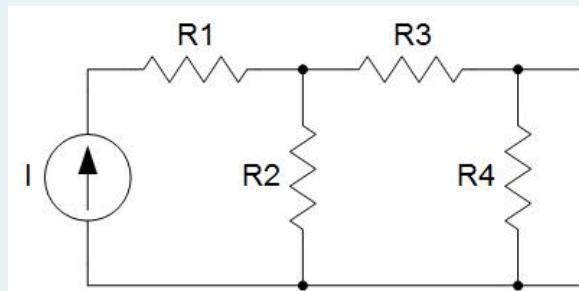
Correct

Marks for this submission: 1.0/1.0.

Question 2

Correct

Mark 1.0 out of 1.0



Through repeated applications of Norton's Theorem, find the value of the Norton equivalent resistance for the circuit shown in kilohms. Use: $I = 7.7\text{mA}$, $R_1 = 6.2\text{k}\Omega$, $R_2 = 13.4\text{k}\Omega$, $R_3 = 6.9\text{k}\Omega$ and $R_4 = 30.5\text{k}\Omega$.

Answer: ✓

The correct answer is: 12.19

Correct

Marks for this submission: 1.0/1.0.

Question 3

Correct

Mark 1.0 out of 1.0

Resistors in series can be combined to find the total equivalent resistance by :

Select one:

- ☐ a. Taking the reciprocal of the sum of the reciprocals of each resistance
- ☐ b. Multiplying the resistances together
- ☐ c. Adding the reciprocal of each resistance together
- ☒ d. Adding the resistances together
- ☐ e. None of the these

✓

The correct answer is: Adding the resistances together

Correct

Marks for this submission: 1.0/1.0.

Question **4**

Correct

Mark 1.0 out of 1.0

If a voltage source is applied across two resistors in parallel, R1 and R2, and the same current flows through both R1 and R2, then :

Select one:

- ☐ a. No way to determine
- ☐ b. R1 has a lower resistance than R2
- ☐ c. None of these
- ☒ d. R1 has the same resistance as R2
- ☐ e. R1 has a higher resistance than R2



The correct answer is: R1 has the same resistance as R2

Correct

Marks for this submission: 1.0/1.0.

Question **5**

Correct

Mark 0.0 out of 1.0

Inductors in series can be combined to find the total equivalent inductance by :

Select one:

- ☒ a. Adding the inductances together
- ☐ b. Multiplying the inductances together
- ☐ c. None of these
- ☐ d. Taking the reciprocal of the sum of the reciprocals of each inductance
- ☐ e. Adding the reciprocal of each inductance together



The correct answer is: Adding the inductances together

Correct

Marks for this submission: 1.0/1.0. Accounting for previous tries, this gives **0.0/1.0**.

Question **6**

Correct

Mark 1.0 out of 1.0

If a current source is applied to two resistors in parallel, both resistors will have the same voltage across them.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Correct

Marks for this submission: 1.0/1.0.

Question **7**

Correct

Mark 0.0 out of 1.0

The Norton's equivalent current for a circuit is found by measuring the open circuit output current of the circuit.

Select one:

- ☐ True
- ☒ False ✓

The correct answer is 'False'.

Correct

Marks for this submission: 1.0/1.0. Accounting for previous tries, this gives **0.0/1.0**.

Question **8**

Correct

Mark 1.0 out of 1.0

The Thevenin's equivalent resistance for a circuit is found by measuring the resistance looking into the output terminals of the circuit while all independent voltage and current sources are set equal to zero.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

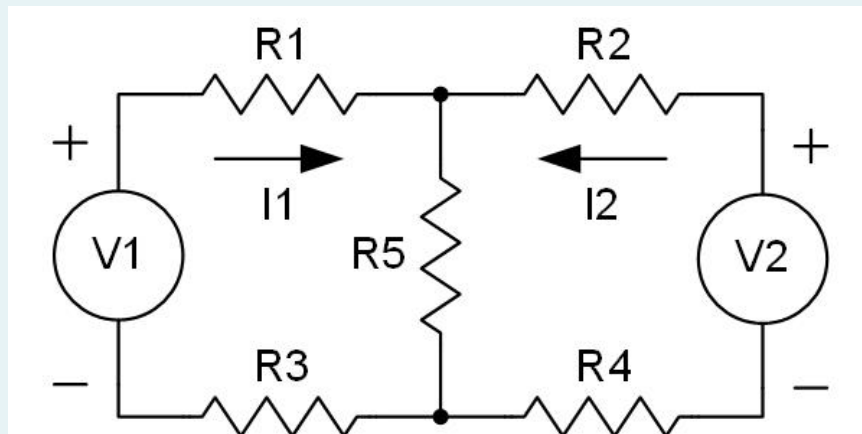
Correct

Marks for this submission: 1.0/1.0.

Question 9

Correct

Mark 1.0 out of 1.0



For the circuit shown, what is the value of the voltage across R_5 in volts? Use: $V_1 = 17.8\text{V}$, $V_2 = 13.7\text{V}$, $R_1 = 7.6\text{k}\Omega$, $R_2 = 7.9\text{k}\Omega$, $R_3 = 13.7\text{k}\Omega$, $R_4 = 4.0\text{k}\Omega$ and $R_5 = 7.2\text{k}\Omega$.

Answer: ✓

The correct answer is: 7.363

Correct

Marks for this submission: 1.0/1.0.

Question 10

Correct

Mark 1.0 out of 1.0

If a resistor has 7.8 volts across it when 12.35mA flow through it, then what is the value of the power dissipated by this resistor in milliwatts?

Answer: ✓

The correct answer is: 96.33

Correct

Marks for this submission: 1.0/1.0.

[◀ List of Calculators allowed on exams](#)[Practice Quiz 1b - Signals and Amplifiers ▶](#)