Parallel Resistive Circuits Quiz

1. How do you identify a parallel circuit?

A Only one path for current flow

B Multiple paths for current flow

C Multiple circuit voltages

D Multiple circuit resistances

1. The voltage across each parallel resistor
   1. Is equal to the ratio of the resistance
   2. Is equal to the ratio of the currents
   3. Is the same
   4. Cannot be determined
2. Kirchhoff’s current law states

A The ratio of current at a node is equal to the ratio of resistance

B The total current into a node equals the total resistance out of the junction C The ratio of the voltages equals the ratio of the resistances

D The sum of the currents into a node equals the sum of the currents out

1. When additional resistors are connected in parallel, total resistance

A Increases

B Decreases

C Stays the same

D Cannot be determined

1. A parallel circuit acts like a

A Current divider

B Voltage divider

C Resistance divider

D Voltage source

1. When there is an open circuit in one parallel branch

A Voltage increases

B Voltage decreases

C Other branch currents stay the same

D Other branch currents decrease

1. A parallel circuit has the following resistances: R1 = 390 Ω, R2 = 560 Ω, R3 = 820 Ω. Which resistor has the least current?

A R1

B R2

C R3

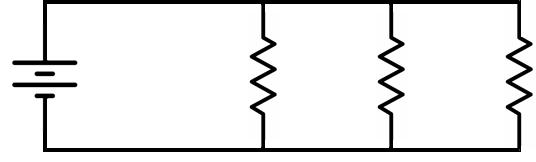
D They all have the same current

1. A parallel circuit has the following currents: IT = 110 mA, I1 = 20 mA, I3 = 40mA, I2 = \_\_\_\_\_.
   1. 20 mA
   2. 40 mA
   3. 50 mA
   4. 60 mA
2. Four resisters are connected in parallel. IT = 50 mA, I1 = 15 mA, I4 = 25 mA, and R2 = R3. What is the current through R3?
3. The following resistors are connected in parallel. R1 = 1 kΩ, R2 = 2.2 kΩ, R3 = 4.7 kΩ. What is RT?
4. The following resistors are connected in parallel. R1 = 3.3 kΩ, R2 = 4.7 kΩ, R3 = 6.8 kΩ. What is

RT?

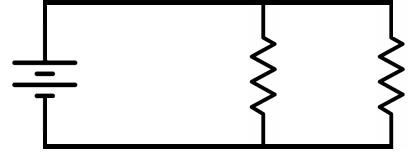
12. In a parallel circuit, R1 = R2 = R3 and RT = 3.3 MΩ. What is R1?

13. In the following circuit, what is IT?



|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| VS | = | R1 | = | R2 = | R3 = |  |
| 15 V | |  |
| 20 kΩ | | 20 kΩ | 40 kΩ |  |
|  |  |  |

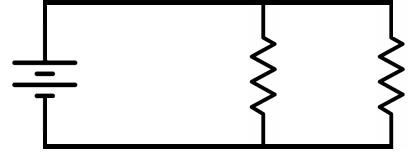
14. In the following circuit, what is VS?



|  |  |  |  |
| --- | --- | --- | --- |
| VS = | IT = 86 mA |  |  |
| R = | R = |  |
| ? | 1 | 2 |  |
| 1.5 kΩ | 300 Ω |  |
|  |  |

21.5 V

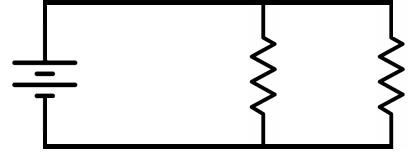
15. In the following circuit, what is R1?



|  |  |  |  |
| --- | --- | --- | --- |
| VS = | IT = 1.36 mA | R2 = |  |
| R1 = |  |
| 20 V | ? Ω | 32.3 kΩ |  |

* 1. KΩ

1. In the following circuit, what is R2?



|  |  |  |  |
| --- | --- | --- | --- |
|  | IT = 6.18 mA |  |  |
| V = | R2 = | R2 = |  |
| S | 6.6 kΩ | ? kΩ |  |
| 32 V |  |
|  |  |  |

24 KΩ