**Parallel Resistive Circuits Quiz**

**(KEY)**

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?
   1. **mA**
3. The following resistors are connected in parallel. R1 = 1 kΩ, R2 = 2.2 kΩ, R3 = 4.7 kΩ. What is RT?

**600Ω**

1. The following resistors are connected in parallel. R1 = 3.3 kΩ, R2 = 4.7 kΩ, R3 = 6.8 kΩ. What is

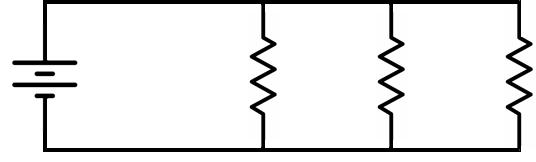
RT?

**1508.6 Ω**

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

**1.1 MΩ**

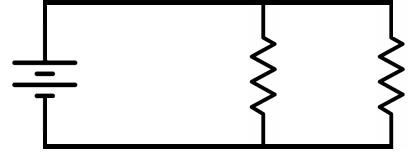
13. In the following circuit, what is IT?



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

**1.875 mA**

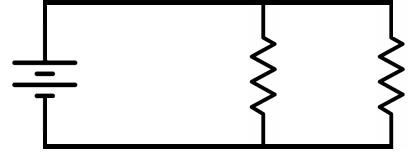
14. In the following circuit, what is VS?



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

**21.5 V**

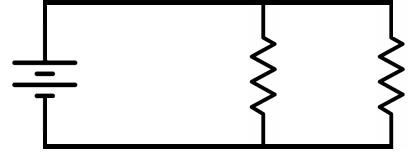
15. In the following circuit, what is R1?



|  |  |  |  |
| --- | --- | --- | --- |
| 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**