CHAPTER 3

B-005-02-07
The letter "R" is the symbol for:

1. impedance
2. resistance
3. reluctance
4. reactance

B-005-02-09
Voltage drop means:

1. voltage developed across the terminals of a component
2. any point in a radio circuit which has zero voltage
3. difference in voltage at output terminals of a transformer
4. the voltage which is dissipated before useful work is accomplished

B-005-04-01
If a current of 2 amperes flows through a 50-ohm resistor, what is the voltage across the resistor?

1. 48 volts
2. 52 volts
3. 100 volts
4. 25 volts

B-005-04-02
How is the current in a DC circuit calculated
when the voltage and resistance are known?

1. Current equals voltage divided by resistance
2. Current equals resistance multiplied by voltage
3. Current equals resistance divided by voltage
4. Current equals power divided by voltage

B-005-04-03
How is the resistance in a DC circuit calculated
when the voltage and current are known?

1. Resistance equals current multiplied by voltage
2. Resistance equals voltage divided by current
3. Resistance equals power divided by voltage
4. Resistance equals current divided by voltage

B-005-04-04
How is the voltage in a DC circuit calculated
when the current and resistance are known?

1. Voltage equals current divided by resistance
2. Voltage equals resistance divided by current
3. Voltage equals power divided by current
4. Voltage equals current multiplied by resistance

B-005-04-05
If a 12-volt battery supplies 0.25 ampere to a
circuit, what is the circuit's resistance?

1. 3 ohms
2. 48 ohms
3. 12 ohms
4. 0.25 ohm

B-005-04-06
Calculate the value of resistance necessary to drop 100 volts with current flow of .8 milliamperes:

1. 125 kilohms
2. 125 ohms
3. 1250 ohms
4. 1.25 kilohms

B-005-04-07
The voltage required to force a current of 4.4 amperes through a resistance of 50 ohms is:

1. 220 volts
2. 2220 volts
3. 22.0 volts
4. 0.220 volt

B-005-04-08
A lamp has a resistance of 30 ohms and a 6 volt battery is connected. The current flow will be:

1. 2 amperes
2. 0.5 ampere
3. 0.005 ampere
4. 0.2 ampere

B-005-04-09
What voltage would be needed to supply a current of 200 mA, to operate an electric lamp which has a resistance of 25 ohms?

1. 5 volts
2. 8 volts
3. 175 volts
4. 225 volts

B-005-04-10
The resistance of a circuit can be found by using one of the following:

1. $R = E/I$
2. $R = I/E$
3. $R = E/R$
4. $R = E \times I$

B-005-04-11
If a 3 volt battery supplies 300 mA to a circuit, the circuit resistance is:

1. 10 ohms
2. 9 ohms
3. 5 ohms
4. 3 ohms

B-005-05-01
In a parallel circuit with a voltage source and several branch resistors, how is the total current related to the current in the branch resistors?

1. It equals the sum of the branch current through each resistor
2. It equals the average of the branch current through each resistor
3. It decreases as more parallel resistors are added to the circuit
4. It is the sum of each resistor's voltage drop multiplied by the total number of resistors

B-005-05-02
A 6 volt battery is connected across three
resistances of 10 ohms, 15 ohms and 20 ohms
connected in parallel.

1. The current through the separate resistances, when added together, equals the total current drawn from the battery
2. The current flowing through the 10 ohm resistance is less than that flowing through the 20 ohm resistance
3. The voltage drop across each resistance added together equals 6 volts
4. The voltage drop across the 20 ohm resistance is greater than the voltage across the 10 ohm resistance

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B-005-05-03
Total resistance in a parallel circuit:

1. is always less than the smallest resistance
2. depends upon the IR drop across each branch
3. could be equal to the resistance of one branch
4. depends upon the applied voltage

B-005-05-04
Two resistors are connected in parallel and are
connected across a 40 volt battery. If each resistor
is 1000 ohms, the total current is:

1. 80 milliamperes
2. 40 milliamperes
3. 80 amperes
4. 40 amperes

B-005-05-05
The total resistance of resistors connected in series is:

1. greater than the resistance of any one resistor
2. less than the resistance of any one resistor
3. equal to the highest resistance present
4. equal to the lowest resistance present

B-005-05-06
Five 10 ohm resistors connected in series equals:

1. 50 ohms
2. 5 ohms
3. 10 ohms
4. 1 ohm

B-005-05-07
Which series combination of resistors would replace a single 120 ohm resistor?

1. six 22 ohm
2. two 62 ohm
3. five 100 ohm
4. five 24 ohm

B-005-05-08
If ten resistors of equal value were wired in parallel, the total resistance would be:

1. 10 / R
2. R / 10
3. 10 x R
4. 10 + R

B-005-05-09
The total resistance of four 68 ohm resistors wired in parallel is:

1. 12 ohms
2. 34 ohms
3. 272 ohms
4. 17 ohms

B-005-05-10
**Two resistors are in parallel. Resistor A
carries twice the current of resistor B, which
means that:**

1. the voltage across B is twice that across A
2. the voltage across A is twice that across B
3. A has half the resistance of B
4. B has half the resistance of A

B-005-05-11
The total current in a parallel circuit is equal to the:

1. source voltage divided by the value of one of the resistive elements
2. sum of the currents through all the parallel branches
3. source voltage divided by the sum of the resistive elements
4. current in any one of the parallel branches

B-005-06-02
**How many watts of electrical power are used
by a 12-VDC light bulb that draws 0.2
ampere?**

1. 2.4 watts
2. 60 watts
3. 24 watts
4. 6 watts

B-005-06-03
The DC input power of a transmitter operating at 12 volts and drawing 500 milliamps would be:

1. 20 watts
2. 6 watts
3. 500 watts
4. 12 watts

B-005-06-04
When two 500 ohm 1 watt resistors are connected in series, the maximum total power that can be dissipated by the resistors is:

1. 1 watt
2. 2 watts
3. ½ watt
4. 4 watts

B-005-06-05
When two 500 ohm 1 watt resistors are connected in parallel, they can dissipate a maximum total power of:

1. ½ watt
2. 1 watt
3. 2 watts
4. 4 watts

B-005-06-06
If the voltage applied to two resistors in series is doubled, how much will the total power change?

1. increase four times
2. decrease to half
3. double
4. no change

B-005-06-07
If the power is 500 watts and the resistance is 20 ohms, the current is:

1. 2.5 amps
2. 10 amps
3. 25 amps
4. 5 amps

B-005-06-08
A 12 volt light bulb is rated at a power of 30 watts. The current drawn would be:

1. 30/12 amps
2. 18 amps
3. 360 amps
4. 12/30 amps

B-005-06-09
If two 10 ohm resistors are connected in series with a 10 volt battery, the power consumption would be:

1. 5 watts
2. 10 watts
3. 20 watts
4. 100 watts

B-005-06-10

One advantage of replacing a 50 ohm resistor with a parallel combination of two similarly rated 100 ohm resistors is that the parallel combination will have:

1. the same resistance but lesser power rating
2. greater resistance and similar power rating
3. the same resistance but greater power rating
4. lesser resistance and similar power rating