B-005-001-006 **(C)**

A kilohm is:

A 0.001 ohm
B 10 ohms
C 1000 ohms
D 0.1 ohm

B-005-001-007 **(B)**

6.6 kilovolts is equal to:

A 66 000 volts
B 6600 volts
C 660 volts
D 66 volts

B-005-001-008 **(C)**

A current of one quarter ampere may be written as:

A 0.25 milliampere
B 250 microamperes
C 250 milliamperes
D 0.5 amperes

B-005-001-009 **(D)**

How many millivolts are equivalent to two volts?

A 0.000002
B 2 000 000
C 0.002
D 2 000

B-005-001-010 **(A)**

One megahertz is equal to:

A 1 000 kHz
B 100 kHz
C 0.001 Hz
D 10 Hz

B-005-001-011 **(C)**

An inductance of 10 000 microhenrys may be stated correctly as:

A 10 henrys
B 1 000 henrys
C 10 millihenrys
D 100 millihenrys

B-005-002-001 **(A)**

Name three good electrical conductors.

A Gold, silver, aluminum
B Gold, silver, wood
C Copper, aluminum, paper
D Copper, gold, mica

B-005-002-002 **(B)**

Name four good electrical insulators.

A Glass, wood, copper, porcelain
B Glass, air, plastic, porcelain
C Plastic, rubber, wood, carbon
D Paper, glass, air, aluminum

B-005-002-003 **(B)**

Why do resistors sometimes get hot when in use?

A They absorb magnetic energy which makes them hot
B Some electrical energy passing through them is lost as heat
C Their reactance makes them heat up
D Hotter circuit components nearby heat them up

B-005-002-004 **(A)**

What is the best conductor among the following materials?

A copper
B carbon
C silicon
D aluminium

B-005-002-005 **(B)**

Which type of material listed will most readily allow an electric current to flow?

A a dielectric
B a conductor
C an insulator
D a semiconductor

B-005-002-006 **(D)**

A length of metal is connected in a circuit and is found to conduct electricity very well. It would be best described as having a:

A high resistance
B high wattage
C low wattage
D low resistance

B-005-002-007 **(C)**

The letter "R" is the symbol for:

A reluctance
B reactance
C resistance
D impedance

B-005-002-008 **(B)**

The reciprocal of resistance is:

A permeability
B conductance
C reactance
D reluctance

B-005-002-009 **(A)**

Voltage drop means:

A the voltage developed across the terminals of a component
B any point in a radio circuit which has zero voltage
C the difference in voltage at output terminals of a transformer
D the voltage which is dissipated before useful work is accomplished

B-005-002-010 **(C)**

The resistance of a conductor changes with:

A current
B humidity
C temperature
D voltage

B-005-002-011 **(A)**

The most common material used to make a resistor is:

A carbon
B gold
C mica
D lead

B-005-003-001 **(A)**

What is the word used to describe the rate at which electrical energy is used?

A Power
B Current
C Voltage
D Resistance

B-005-003-002 **(C)**

If you have light bulbs marked 40 watts, 60 watts and 100 watts, which one will use electrical energy the fastest?

A The 40 watt bulb
B The 60 watt bulb
C The 100 watt bulb
D They will all be the same

B-005-003-003 **(B)**

What is the basic unit of electrical power?

A The ohm
B The watt
C The ampere
D The volt

B-005-003-004 **(C)**

Which electrical circuit will have no current?

A A complete circuit
B A closed circuit
C An open circuit
D A short circuit

B-005-003-005 **(B)**

Which electrical circuit draws too much current?

A An open circuit
B A short circuit
C A dead circuit
D A closed circuit

B-005-003-006 **(B)**

Power is expressed in:

A ohms
B watts
C volts
D amperes

B-005-003-007 **(C)**

Which of the following two quantities should be multiplied together to find power?

A Voltage and inductance
B Resistance and capacitance
C Voltage and current
D Inductance and capacitance

B-005-003-008 **(C)**

Which two electrical units multiplied together give the unit "watts"?

A Farads and henrys
B Amperes and henrys
C Volts and amperes
D Volts and farads

B-005-003-009 **(B)**

A resistor in a circuit becomes very hot and starts to burn. This is because the resistor is dissipating too much:

A current
B power
C voltage
D resistance

B-005-003-010 **(A)**

High power resistors are usually large with heavy leads. The size aids the operation of the resistor by:

A allowing heat to dissipate more readily
B allowing higher voltage to be handled
C increasing the effective resistance of the resistor
D making it shock proof

B-005-003-011 **(A)**

The resistor that could dissipate the most heat would be marked:

A 20 watts
B 100 ohms
C 2 ohms
D 0.5 watt

B-005-004-001 **(B)**

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

A 25 volts
B 100 volts
C 48 volts
D 52 volts

B-005-004-002 **(C)**

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

A Current equals resistance divided by voltage
B Current equals power divided by voltage
C Current equals voltage divided by resistance
D Current equals resistance multiplied by voltage

B-005-004-003 **(C)**

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

A Resistance equals power divided by voltage
B Resistance equals current divided by voltage
C Resistance equals voltage divided by current
D Resistance equals current multiplied by voltage

B-005-004-004 **(A)**

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

A Voltage equals current multiplied by resistance
B Voltage equals current divided by resistance
C Voltage equals resistance divided by current
D Voltage equals power divided by current

B-005-004-005 **(C)**

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

A 12 ohms
B 0.25 ohm
C 48 ohms
D 3 ohms

B-005-004-006 **(C)**

Calculate the value of resistance necessary to drop 100 volts with current flow of 0.8 milliamperes:

A 1250 ohms
B 1.25 kilohms
C 125 kilohms
D 125 ohms

B-005-004-007 **(C)**

The voltage required to force a current of 4.4 amperes through a resistance of 50 ohms is:

A 22.0 volts
B 0.220 volt
C 220 volts
D 2220 volts

B-005-004-008 **(C)**

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

A 0.5 ampere
B 0.005 ampere
C 0.2 ampere
D 2 amperes

B-005-004-009 **(C)**

What voltage would be needed to supply a current of 200 milliamperes, to operate an electric lamp which has a resistance of 25 ohms?

A 175 volts
B 225 volts
C 5 volts
D 8 volts

B-005-004-010 **(C)**

The resistance of a circuit can be found by using one of the following:

A R = E/R
B R = E x I
C R = E/I
D R = I/E

B-005-004-011 **(C)**

If a 3 volt battery supplies 300 milliamperes to a circuit, the circuit resistance is:

A 5 ohms
B 3 ohms
C 10 ohms
D 9 ohms

B-005-005-001 **(D)**

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?

A It equals the average of the branch current through each resistor
B It decreases as more parallel resistors are added to the circuit
C It is the sum of each resistor's voltage drop multiplied by the total number of resistors
D It equals the sum of the branch current through each resistor

B-005-005-002 **(B)**

Three resistors, respectively rated at 10, 15 and 20 ohms are connected in parallel across a 6-volt battery. Which statement is true?

A The voltage drop across the 20 ohm resistance is greater than the voltage across the 10 ohm resistance
B The current through the 10 ohms, 15 ohms and 20 ohms separate resistances, when added together, equals the total current drawn from the battery
C The current flowing through the 10 ohm resistance is less than that flowing through the 20 ohm resistance
D The voltage drop across each resistance added together equals 6 volts

B-005-005-003 **(B)**

Total resistance in a parallel circuit:

A depends upon the applied voltage
B is always less than the smallest resistance
C depends upon the voltage drop across each branch
D could be equal to the resistance of one branch

B-005-005-004 **(A)**

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

A 80 milliamperes
B 40 milliamperes
C 80 amperes
D 40 amperes

B-005-005-005 **(B)**

The total resistance of resistors connected in series is:

A equal to the lowest resistance present
B greater than the resistance of any one resistor
C less than the resistance of any one resistor
D equal to the highest resistance present

B-005-005-006 **(B)**

Five 10 ohm resistors connected in series equals:

A 1 ohm
B 50 ohms
C 5 ohms
D 10 ohms

B-005-005-007 **(A)**

Which series combination of resistors would replace a single 120 ohm resistor?

A Five 24 ohm
B Six 22 ohm
C Two 62 ohm
D Five 100 ohm

B-005-005-008 **(D)**

If ten resistors of equal value were wired in parallel, the total resistance would be:

A 10 / R
B 10 x R
C 10 + R
D R / 10

B-005-005-009 **(D)**

The total resistance of four 68 ohm resistors wired in parallel is:

A 12 ohms
B 34 ohms
C 272 ohms
D 17 ohms

B-005-005-010 **(B)**

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

A B has half the resistance of A
B A has half the resistance of B
C the voltage across B is twice that across A
D the voltage across A is twice that across B

B-005-005-011 **(C)**

The total current in a parallel circuit is equal to the:

A source voltage divided by the sum of the resistive elements
B current in any one of the parallel branches
C sum of the currents through all the parallel branches
D source voltage divided by the value of one of the resistive elements

B-005-006-001 **(C)**

Why would a large size resistor be used instead of a smaller one of the same resistance?

A For a higher current gain
B For less impedance in the circuit
C For greater power dissipation
D For better response time

B-005-006-002 **(C)**

How many watts of electrical power are used by a 12 volt DC light bulb that draws 0.2 ampere?

A 24 watts
B 6 watts
C 2.4 watts
D 60 watts

B-005-006-003 **(C)**

The DC input power of a transmitter operating at 12 volts and drawing 500 milliamperes would be:

A 500 watts
B 12 watts
C 6 watts
D 20 watts

B-005-006-004 **(A)**

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

A 2 watts
B 1 watt
C 1/2 watt
D 4 watts

B-005-006-005 **(C)**

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

A 1 watt
B 4 watts
C 2 watts
D 1/2 watt

B-005-006-006 **(C)**

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

A Double
B No change
C Increase four times
D Decrease to half

B-005-006-007 **(D)**

Which combination of resistors could make up a 50 ohms dummy load capable of safely dissipating 5 watts?

A Two 5-watt 100 ohms resistors in series
B Two 2-watt 25 ohms resistors in series
C Ten quarter-watt 500 ohms resistors in parallel
D Four 2-watt 200 ohms resistors in parallel

B-005-006-008 **(A)**

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

A 30/12 amperes
B 18 amperes
C 360 amperes
D 12/30 amperes

B-005-006-009 **(B)**

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

A 100 watts
B 5 watts
C 10 watts
D 20 watts

B-005-006-010 **(B)**

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:

A lesser resistance and similar power rating
B the same resistance but greater power rating
C the same resistance but lesser power rating
D greater resistance and similar power rating

B-005-006-011 **(D)**

Resistor wattage ratings are:

A calculated according to physical size and tolerance rating
B expressed in joules
C variable in steps of one hundred
D determined by heat dissipation qualities