

## *Principles of Electric Circuits*

### **Chapter 1: Quantities and Units**

- 1) The unit of measurement for conductance is the coulomb. (True/False)
- 2) Kilo equals 1,000 times the base unit. (True/False)
- 3) Inductors store energy in an electrostatic field. (True/False)
- 4) An electronic device which stores an electric charge is known as an inductor. (True/False)
- 5) The symbol  $\mu$  is an abbreviation for  $10^{-6}$  or micro. (True/False)
- 6) Which of the following are common applications of electronics?
  - A) Computers
  - B) Communications systems
  - C) Automation
  - D) Consumer products
  - E) All of the above
- 7) The symbol for current is:
  - A) **C**
  - B) **I**
  - C) **A**
  - D) **V**
- 8) The unit of measurement for current is the:
  - A) Volt
  - B) Ampere
  - C) Watt
  - D) Ohm
- 9) The symbol for voltage is:
  - A) **C**
  - B) **R**
  - C) **A**
  - D) **V**
- 10) The unit of measurement for voltage is the:
  - A) Volt
  - B) Ampere
  - C) Watt
  - D) Ohm
- 11) The symbol for a resistor is:
  - A) **C**
  - B) **R**
  - C) **A**
  - D) **V**

- 12) The shortcut symbol for ohms is:
- A)  $\alpha$
  - B)  $\Omega$
  - C)  $\delta$
  - D) .
- 13) The unit of measurement for resistance is the:
- A) Volt
  - B) Ampere
  - C) Watt
  - D) Ohm
- 14) Which of the following is NOT a typical electrical component?
- A) Resistor
  - B) Capacitor
  - C) Megatron
  - D) Inductor
  - E) Transformer
- 15) An ohmmeter is used for measuring:
- A) current
  - B) resistance
  - C) voltage
  - D) power
- 16) Which of the following metric prefixes is NOT commonly used in electronics work?
- A) kilo
  - B) milli
  - C) tera
  - D) micro
  - E) pico
- 17) Express the number 10,000 in proper scientific notation.
- A)  $10.0 \times 10^3$
  - B)  $100.0 \times 10^2$
  - C)  $1.0 \times 10^4$
  - D)  $1.0 \times 10^3$
- 18) Convert 4.7 mA to amperes.
- A) 0.00047 A
  - B) 0.0047 A
  - C) 4,700 A
  - D) 47,000 A
- 19) Convert 120 mW to W.
- A) 120,000 W
  - B) 1,200 W
  - C) 0.00012 W
  - D) 0.12 W

- 20) Convert 10,000 ohms to k $\Omega$ .  
A) 1 k $\Omega$   
B) 10 k $\Omega$   
C) 100 k $\Omega$   
D) 1000 k $\Omega$
- 21) Convert 75  $\mu$ V to mV.  
A) 7500 mV  
B) 75,000 mV  
C) 0.075 mV  
D) 0.000075 mV
- 22) Convert 5.7 mW to  $\mu$ W.  
A) 0.057  $\mu$ W  
B) 0.00057  $\mu$ W  
C) 57,000  $\mu$ W  
D) 5,700  $\mu$ W
- 23) Convert  $6.8 \times 10^{-5}$  W to the closest standard metric prefix.  
A) 68  $\mu$ W  
B) 0.68  $\mu$ W  
C) 680  $\mu$ W  
D) 6.8  $\mu$ W
- 24) Convert  $3.95 \times 10^{-4}$  A to the closest standard metric prefix.  
A) 3.95 mA  
B) 39.5 mA  
C) 0.395 mA  
D) 395 mA

**Convert the following:**

- 25)  $2 \times 10^{-3}$  Amp = \_\_\_\_\_  
A) 2 microamps  
B) 2 amps  
C) 2 milliamps  
D) 0.5 milliamps
- 26) 4.7 k $\Omega$  = \_\_\_\_\_  
A)  $4.7 \times 10^{-3}$   $\Omega$   
B)  $4.7 \times 10^3$   $\Omega$   
C)  $47 \times 10^{-3}$   $\Omega$   
D)  $4.7 \times 10^{-4}$   $\Omega$
- 27) 3.9 k $\Omega$  = \_\_\_\_\_  
A)  $39 \times 10^{-3}$   $\Omega$   
B)  $3.9 \times 10^5$   $\Omega$   
C)  $3.9 \times 10^3$   $\Omega$   
D)  $3.9 \times 10^{-4}$   $\Omega$

- 28) 980 microvolts = \_\_\_\_\_  
A) 9.80 millivolts  
B)  $98 \times 10^3$  V  
C)  $980 \times 10^{-3}$  V  
D) both A and C  
E) none of the above
- 29) 2.2 kV = \_\_\_\_\_  
A) 2,200 Volts  
B)  $22 \times 10^3$  V  
C)  $2.2 \times 10^{-3}$  V  
D)  $2.2 \times 10^{-4}$  V
- 30) Siemens is a unit for:  
A) resistance  
B) conductance  
C) power  
D) voltage
- 31) The \_\_\_\_\_ is a device that magnetically couples ac voltages from one point in a circuit to another.  
A) dc power supply  
B) capacitor  
C) transformer  
D) inductor
- 32) A resistor is a device that \_\_\_\_\_.  
A) opposes the flow of electrons  
B) stores power  
C) is a type of semiconductor  
D) stores electrostatic charge
- 33) The shorthand method that uses a base number between 1 and 10 is called:  
A) decimal  
B) scientific notation  
C) prefix  
D) engineering notation
- 34) The symbol for power is:  
A) **Z**  
B) **W**  
C) **Q**  
D) **P**
- 35) An oscilloscope is used primarily for measuring \_\_\_\_\_.  
A) current  
B) ac voltage  
C) power  
D) conductance