Preparation for Circuits

# Concept Questions: Units

---

1. A current 10,000 $\mu$A can be felt by humans. How many milliamps (mA) is this?
   (A) 10.0
   (B) 0.1
   (C) 100.0
   (D) 1.0
2. A voltage of 10 MV is equal to:
   (A) 1,000 GV
   (B) 0.001 GV
   (C) 0.01 GV
   (D) 10,000 GV
3. $10^{-2}$ seconds is equal to:
   (A) 10 ms
   (B) 1 ms
   (C) 0.1 ms
   (D) $10^2$ ms
4. **T** or **F**: A current of 100 pA is larger than a current of 1 nA.
5. The unit for power is Watts. Watts can be equivalently expressed as:
   (A) Joules per coulomb
   (B) Coulombs per second
   (C) Joules per second
   (D) Amps per coulomb
6. What is 10 V / 1 k$\Omega$?
   (A) 10 mA
   (B) 10 A
   (C) 1 mA
   (D) 1 A
7. If a signal can travel in a cable at 80% of the speed of light, what length of cable, in inches, represents 1 ns?
   (A) 0.945 inches
   (B) 0.000945 inches
   (C) 9.45 inches
   (D) 9,450 inches

8. Two circuit equations are provided with two unknown parameters. What are $I_1$ and $I_2$, respectively?

$$5\Omega I_1 + 15\Omega I_2 = 25\text{V}$$
$$I_2 - I_1 = 9\text{A}$$

(A) 3 A, 12 A,

(B) -5.5 A, 3.5 A

(C) -6 A, 3 A

(D) -3.5 A, 5.5 A