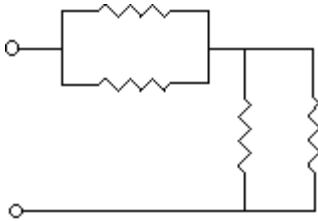


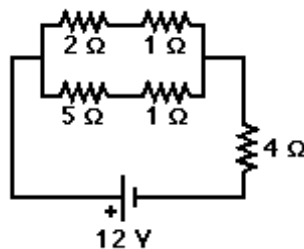
MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) The resistors in the circuit shown each have a resistance of $900\ \Omega$. What is the equivalent resistance of the circuit?



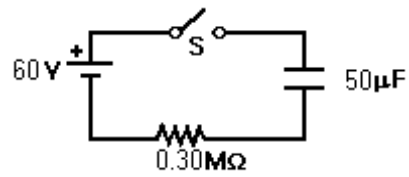
- A) $3600\ \Omega$ B) $1800\ \Omega$ C) $900\ \Omega$ D) $225\ \Omega$
- 2) A 2.0-m length of gold wire is connected to a 1.5-V battery, and a current of $9.0\ \text{mA}$ flows through it. What is the diameter of the wire? The resistivity of gold is $2.24 \times 10^{-8}\ \Omega \cdot \text{m}$.
- A) $18.6\ \mu\text{m}$ B) $4.5 \times 10^{-11}\ \text{m}$ C) $8.6\ \mu\text{m}$ D) $54\ \text{mm}$
- 3) In a certain electroplating process gold is deposited by using a current of $10\ \text{A}$ for $15\ \text{minutes}$. An Au^+ ion has a mass of approximately $3.3 \times 10^{-22}\ \text{g}$. How many grams of gold are deposited in this process?
- A) 12.3 B) 14.3 C) 18.6 D) 46.5 E) 9.20
- 4) The density of conduction electrons in aluminum is $2.1 \times 10^{29}\ \text{m}^{-3}$. What is the drift velocity in an aluminum conductor that has a $3.0\ \mu\text{m}$ by $4.0\ \mu\text{m}$ rectangular cross section and when a 27.0-mA current flows through the conductor?
- A) $0.18\ \text{m/s}$ B) $0.042\ \text{m/s}$ C) $0.067\ \text{m/s}$ D) $0.11\ \text{m/s}$
- 5) A rechargeable battery that is completely drained of electrical energy can be completely charged by applying $4.0\ \text{mA}$ of current for $1.0\ \text{h}$. If the battery acquires an emf of $2.0\ \text{V}$ in the process of being charged, how much energy is the battery capable of storing?
- A) $29\ \text{J}$ B) $8.0\ \text{mJ}$ C) $2.2\ \mu\text{J}$ D) $0.50\ \text{kJ}$

Figure 27.7



- 6) In Figure 27.7, what is the power dissipated in the $2\ \text{ohm}$ resistance in the circuit?
- A) $5.33\ \text{W}$ B) $3.56\ \text{W}$ C) $2.67\ \text{W}$ D) $8.0\ \text{W}$ E) $6.67\ \text{W}$

Figure 27.9



Initially, for the circuit shown, the switch S is open and the capacitor is uncharged. The switch S is closed at time $t = 0$.

- 7) In Figure 27.9, at a given instant, the potential difference across the capacitor is twice the potential difference across the resistor. At that instant, the charge on the capacitor, in μC , is closest to:
- A) 1200 B) 1400 C) 1800 D) 2000 E) 1600

Answer Key

Testname: 1BB-QUIZ3

- 1) C
- 2) A
- 3) C
- 4) C
- 5) A
- 6) B
- 7) D