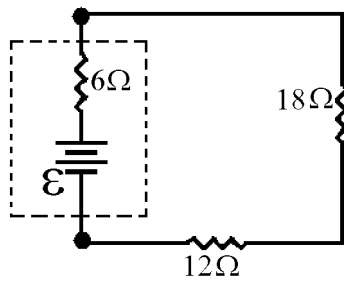


Base your answers to questions 1 and 2 on the circuit diagram below which shows a battery with an internal resistance of $6.0\ \Omega$ connected to a $12\text{-}\Omega$ and $18\text{-}\Omega$ resistor in series. The current in the $12\text{-}\Omega$ resistor is 0.2 A .



1. What is the emf of the battery?

- A) 1.2 V
- B) 2.4 V
- C) 6.0 V
- D) 7.2 V
- E) 10.8 V

2. What is the potential between the two terminals of the battery?

- A) 1.2 V
- B) 2.4 V
- C) 6.0 V
- D) 7.2 V
- E) 10.8 V

3. A battery has an emf of 8 V and an internal resistance $2\ \Omega$. If it is connected to an external circuit that draws 6 W of power, what is a possible current in the circuit?

- A) 1 A
- B) 2 A
- C) 4 A
- D) 6 A
- E) 8 A

4. A battery with an emf of 30 V has an internal resistance of $5\ \Omega$. This battery is connected to a $10\ \Omega$ resistor. The current in the resistor is equal to

- A) 0.5 A
- B) 1 A
- C) 2 A
- D) 5 A
- E) 10 A

5. A battery with an internal resistance of $4\ \Omega$ is connected to a $40\ \Omega$ resistor to which it delivers 3 A of current. What is the emf of the battery?

- A) 92 V
- B) 120 V
- C) 132 V
- D) 160 V
- E) 240 V

6. What is the internal resistance of a battery with an EMF of 20 V that produces a 4 A current when connected to a 5 Ω resistor?

- A) 0 Ω
- B) 1 Ω
- C) 2 Ω
- D) 5 Ω
- E) 7.2 Ω

Answer Key
Dielectrics MC Questions [Mar 28, 2011]

1. D
 2. C
 3. A
 4. C
 5. C
 6. A
-

Name _____

Class _____

Date _____

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____
- 6. _____