

# ECC Test 1 Practice (Sample)

## Study Guide



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**SAMPLE**

## **Questions**

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- 1. In which situation is a higher resistance preferred?**
  - A. When maximum current flow is needed**
  - B. To minimize current flow**
  - C. To generate heat**
  - D. For low voltage applications**
- 2. What is the primary function of a circuit breaker?**
  - A. To enhance circuit performance**
  - B. To allow unlimited current flow**
  - C. To stop current in the event of a short or overload**
  - D. To increase voltage in a circuit**
- 3. What action should be taken if a patient shows signs of shock?**
  - A. Provide them with food and water**
  - B. Keep them warm and lying flat**
  - C. Move them to a bright area**
  - D. Administer high amounts of physical activity**
- 4. What is a key element of effective communication in emergency care?**
  - A. Using technical jargon**
  - B. Ensuring clear and concise information delivery**
  - C. Speaking loudly**
  - D. Providing excessive detail**
- 5. What must be done before using an ohm meter?**
  - A. The circuit should be powered on**
  - B. The component must be connected to the circuit**
  - C. The power must be removed from the circuit and the component should be isolated**
  - D. The ohm meter must be set to voltage mode**

- 6. Which symptoms are represented by the acronym FAST in recognizing a stroke?**
- A. Fever, Anger, Speech, Time**
  - B. Face drooping, Arm weakness, Speech difficulties, Time to call emergency services**
  - C. Fatigue, Aches, Sore throat, Time to rest**
  - D. Faintness, Abdominal pain, Sweating, Time to relax**
- 7. What does a millivolt (mV) represent?**
- A. One thousand volts**
  - B. A millionth of a volt**
  - C. One hundredth of a volt**
  - D. A thousandth of a volt**
- 8. What charge do electrons carry?**
- A. Positive charge**
  - B. Neutral charge**
  - C. Negatively charged particles**
  - D. Both positive and negative charge**
- 9. What does microvolt (uV) measure in relation to a Volt?**
- A. 1,000 times smaller than a Volt**
  - B. 10,000 times smaller than a Volt**
  - C. 100,000 times smaller than a Volt**
  - D. 1,000,000 times smaller than a Volt**
- 10. What is the primary function of an emergency medical dispatcher?**
- A. To provide first aid instructions**
  - B. To dispatch emergency services to the scene**
  - C. To administer emergency medications**
  - D. To perform medical assessments**

## **Answers**

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1. B
2. C
3. B
4. B
5. C
6. B
7. D
8. C
9. D
10. B

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## **Explanations**

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**1. In which situation is a higher resistance preferred?**

- A. When maximum current flow is needed**
- B. To minimize current flow**
- C. To generate heat**
- D. For low voltage applications**

A higher resistance is preferred to minimize current flow in electrical circuits. According to Ohm's Law, which states that Voltage (V) = Current (I) x Resistance (R), increasing resistance will have a direct impact on reducing the current for a given voltage. This is particularly useful in applications where drawing excessive current could be harmful to components, waste energy, or generate unwanted heat. For instance, in electronic circuits designed for low-power applications, higher resistance allows for better control over current flow, enhancing the safety, efficiency, and longevity of devices. This principle is utilized in various scenarios such as in resistive elements used for current limiting, ensuring that sensitive components are not subjected to high current levels that could damage them. Overall, selecting higher resistance serves to effectively regulate and control current, which is a fundamental principle in circuit design and electronics.

**2. What is the primary function of a circuit breaker?**

- A. To enhance circuit performance**
- B. To allow unlimited current flow**
- C. To stop current in the event of a short or overload**
- D. To increase voltage in a circuit**

The primary function of a circuit breaker is to stop current in the event of a short circuit or an overload. Circuit breakers are critical safety devices that automatically interrupt the flow of electricity when they detect an anomaly in the electrical circuit, such as excessive current that could lead to overheating, fires, or electrical hazards. This interruption helps protect both the wiring and devices connected to the circuit from damage. When there is a short circuit or overload, the circuit breaker quickly opens (or "trips"), breaking the electrical continuity and preventing potential harm. This action is essential for maintaining electrical safety standards in homes and industrial settings, ensuring that equipment operates within safe limits. Options that suggest the circuit breaker enhances performance, allows unlimited current flow, or increases voltage misunderstand the fundamental purpose of a circuit breaker. Enhancing performance or allowing unlimited current would contradict the safety role of the device, while increasing voltage is unrelated to the function of breaking circuits; circuit breakers simply ensure that circuits do not carry excess current.

### **3. What action should be taken if a patient shows signs of shock?**

- A. Provide them with food and water**
- B. Keep them warm and lying flat**
- C. Move them to a bright area**
- D. Administer high amounts of physical activity**

When a patient shows signs of shock, it is critical to prioritize their safety and comfort. Keeping them warm and lying flat helps to improve blood flow to vital organs and reduces the risk of further complications. This position can also help prevent any potential injuries that may result from sudden falls or loss of consciousness. Maintaining warmth is important because shock often causes a drop in body temperature, and this can exacerbate the patient's condition. The flat position helps to facilitate circulation, allowing the heart to pump more effectively and aiding in delivering oxygen and nutrients to where they are most needed. Providing food and water is not appropriate in cases of shock, as the patient may not be able to swallow safely or may require medical intervention. Moving to a bright area can be disorienting and is not beneficial for someone in shock, who may need a calm, quiet environment. Lastly, administering high amounts of physical activity can worsen the patient's condition by increasing their heart rate and depleting their energy reserves further. Thus, the action of keeping the patient warm and lying flat is the most suitable response to alleviate shock symptoms and stabilize the patient until professional medical help can be obtained.

### **4. What is a key element of effective communication in emergency care?**

- A. Using technical jargon**
- B. Ensuring clear and concise information delivery**
- C. Speaking loudly**
- D. Providing excessive detail**

Ensuring clear and concise information delivery is essential in emergency care because it allows healthcare providers to convey critical information quickly and accurately. In emergencies, time is of the essence, and providers often have only moments to assess a situation and communicate necessary details to team members or patients. Clear communication helps in avoiding misunderstandings that could lead to errors in treatment or delays in care. Additionally, concise communication streamlines the process, enabling all parties involved to grasp the necessary information without sifting through unnecessary details. This is particularly important in high-stress environments, where clarity can significantly affect patient outcomes. By focusing on what is most important, providers can ensure that everyone is on the same page, which is crucial for effective teamwork and patient safety in an emergency setting.

**5. What must be done before using an ohm meter?**

- A. The circuit should be powered on
- B. The component must be connected to the circuit
- C. The power must be removed from the circuit and the component should be isolated**
- D. The ohm meter must be set to voltage mode

Using an ohm meter requires specific procedures to ensure accurate measurements and safety. The correct action is to remove power from the circuit and isolate the component. This is crucial because if there's any voltage present in the circuit while measuring resistance, it can lead to incorrect readings and potentially damage the meter. Isolating the component means disconnecting it from the circuit, which ensures that the resistance measurement is only of the component itself, without interference from other components or power sources. By adhering to this practice, you guarantee both the accuracy of your measurement and the safety of your testing equipment.

**6. Which symptoms are represented by the acronym FAST in recognizing a stroke?**

- A. Fever, Anger, Speech, Time
- B. Face drooping, Arm weakness, Speech difficulties, Time to call emergency services**
- C. Fatigue, Aches, Sore throat, Time to rest
- D. Faintness, Abdominal pain, Sweating, Time to relax

The acronym FAST is a widely recognized tool used to identify potential stroke symptoms quickly and effectively. Each component of the acronym provides a specific sign that indicates someone may be experiencing a stroke. "Face drooping" refers to the unevenness or weakness in one side of the face. When a person is asked to smile, one side may droop or not move as well as the other. "Arm weakness" indicates that the person may have difficulty lifting both arms due to weakness in one arm, which can result from the stroke affecting relevant brain areas. "Speech difficulties" involve problems such as slurred speech or the inability to speak clearly. This can manifest as difficulty finding words or forming sentences. Lastly, "Time to call emergency services" emphasizes the urgent need for immediate medical help. Prompt treatment in stroke cases can significantly improve outcomes, so recognizing these symptoms and acting fast is crucial. This understanding is essential in stroke recognition and response, highlighting why this answer accurately captures the important aspects of responding to a potential stroke.

## 7. What does a millivolt (mV) represent?

- A. One thousand volts
- B. A millionth of a volt
- C. One hundredth of a volt
- D. A thousandth of a volt**

A millivolt (mV) specifically represents one thousandth of a volt. In the metric system, the prefix "milli" denotes a factor of  $10^{-3}$ , meaning that one millivolt is equal to 0.001 volts. Understanding this unit is crucial in various applications, including electronics and electrical engineering, where precise voltage readings are essential. This helps gauge small voltage levels that are commonly encountered in sensors, batteries, and other devices. The other choices contain misunderstandings of the metric prefixes. For instance, one thousand volts would refer to kilovolts (kV), a millionth of a volt is termed microvolts (μV), and one hundredth of a volt refers to centivolts (cV). Recognizing these prefixes is vital for anyone working in fields that involve electrical quantities.

## 8. What charge do electrons carry?

- A. Positive charge
- B. Neutral charge
- C. Negatively charged particles**
- D. Both positive and negative charge

Electrons are fundamental subatomic particles that carry a negative electrical charge. This property is essential in understanding a wide range of phenomena in physics and chemistry. Electrons interact with other charged particles through the electromagnetic force, which is central to chemical bonding, electrical conductivity, and many other areas of science. The concept of electrons being negatively charged is a cornerstone of atomic theory, distinguishing them from protons, which have a positive charge, and neutrons, which are neutral. This negative charge allows electrons to create electric fields and engage in various interactions with other particles. Understanding the charge of electrons is crucial for grasping concepts in electricity and magnetism, as well as in the behavior of atoms and molecules.

## 9. What does microvolt (μV) measure in relation to a Volt?

- A. 1,000 times smaller than a Volt
- B. 10,000 times smaller than a Volt
- C. 100,000 times smaller than a Volt
- D. 1,000,000 times smaller than a Volt**

A microvolt (μV) is a unit of measurement for electric potential. Specifically, it is one-millionth of a volt. This relationship means that when you reference the measurement of microvolts, you are looking at a scale that is 1,000,000 times smaller than that of a single volt. This detailed understanding of the conversion between volts and microvolts stems from the metric system's use of prefixes to denote powers of ten. In this case, the prefix "micro-" signifies a factor of  $(10^{-6})$ , which directly translates to one-millionth. Therefore, there are 1,000,000 microvolts in one volt, affirming why the correct answer is indeed that a microvolt measures 1,000,000 times smaller than a volt. Understanding this relationship is crucial in fields such as electronics and electrical engineering, where precise measurements of small voltages are often necessary.

**10. What is the primary function of an emergency medical dispatcher?**

- A. To provide first aid instructions**
- B. To dispatch emergency services to the scene**
- C. To administer emergency medications**
- D. To perform medical assessments**

The primary function of an emergency medical dispatcher is to dispatch emergency services to the scene. Dispatchers are responsible for receiving emergency calls, assessing the nature and urgency of the situation, and communicating the necessary information to the appropriate emergency responders. This involves determining the best course of action and ensuring that ambulance, fire, or police services are sent to the right location quickly. While providing first aid instructions may be part of a dispatcher's role, their main responsibility lies in coordinating the response and ensuring that emergency personnel are en route. They play a critical role in managing the flow of information between callers in distress and emergency responders, which can significantly impact the timeliness and effectiveness of the emergency response. Administering emergency medications and performing medical assessments are duties typically reserved for trained healthcare professionals, such as paramedics or emergency medical technicians, rather than dispatchers. Thus, the role is primarily focused on communication and coordination rather than direct medical intervention.