

AEMCA Practice Exam (Sample)

Study Guide



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Questions

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- 1. What are the two pathways an occupant can take in relation to the dashboard during a collision?**
 - A. Down and under, and sideways.**
 - B. Up and over, and down and under.**
 - C. Forward and backward, and motionless.**
 - D. Sideways and diagonally.**
- 2. What could happen if blood pools in a weakened left ventricle?**
 - A. Increased oxygenation of blood**
 - B. Formation of blood clots**
 - C. Reduction in cardiac workload**
 - D. Improved stroke volume**
- 3. What type of disease does the mumps virus cause?**
 - A. A respiratory infection**
 - B. A gastrointestinal infection**
 - C. An infectious disease that spreads through saliva**
 - D. A skin disease**
- 4. Which of the following codes is associated with returning to a base location?**
 - A. 10-19**
 - B. 10-3**
 - C. 10-4**
 - D. 10-7**
- 5. Which triage level would be indicated by severe breathing difficulties, severe bleeding, or decreased mental status?**
 - A. Green**
 - B. Yellow**
 - C. Red**
 - D. Black**

- 6. When does a chance fracture typically occur?**
- A. When the body is in a relaxed position**
 - B. When the body moves forward suddenly fracturing vertebra**
 - C. During repetitive stress activities**
 - D. As a result of twisting motions**
- 7. What role do buffers play in the body?**
- A. They regulate body temperature**
 - B. They control pH balance**
 - C. They store energy**
 - D. They transport nutrients**
- 8. What is the meaning of the code 10-19?**
- A. Need assistance**
 - B. Respond to location**
 - C. Back to base**
 - D. Out of county**
- 9. What is the effect of the vagus nerve on the body?**
- A. Enhances blood flow to the brain**
 - B. Regulates muscles of the throat and gastrointestinal tract**
 - C. Controls facial expressions and taste**
 - D. Stimulates auditory function**
- 10. Which of the following joints is an example of a saddle joint?**
- A. Shoulder joint**
 - B. Elbow joint**
 - C. Thumb joint**
 - D. Knee joint**

Answers

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

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Explanations

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1. What are the two pathways an occupant can take in relation to the dashboard during a collision?

- A. Down and under, and sideways.**
- B. Up and over, and down and under.**
- C. Forward and backward, and motionless.**
- D. Sideways and diagonally.**

In a collision, the two pathways an occupant can take in relation to the dashboard are up and over, and down and under. The "up and over" pathway describes a situation where the occupant moves toward the roof of the vehicle, potentially impacting their head against the windshield or the roof structure. This can occur in high-impact collisions where the force of the crash causes the occupant to be propelled upward. On the other hand, the "down and under" pathway refers to the occupant sliding down beneath the dashboard or front seat area, which can happen during a frontal crash when the driver's or passenger's legs are pushed down due to the force of the impact. This movement can lead to injuries as the occupant's body may come into contact with the steering column or other hard surfaces in the footwell area. Understanding these pathways is crucial for emergency medical responders as it helps them anticipate potential injuries based on how the occupant's body moved during the collision, thus allowing for more effective assessment and treatment.

2. What could happen if blood pools in a weakened left ventricle?

- A. Increased oxygenation of blood**
- B. Formation of blood clots**
- C. Reduction in cardiac workload**
- D. Improved stroke volume**

When blood pools in a weakened left ventricle, one of the primary concerns is the increased risk of formation of blood clots. A healthy heart functions to effectively pump blood throughout the body. However, if the left ventricle is weakened, it cannot contract efficiently, leading to stagnant blood flow within that chamber. This stagnation creates an environment where blood can clot, as the absence of movement increases the likelihood of platelets adhering to vessel walls and each other, forming clots. These clots can then dislodge and travel through the circulatory system, potentially leading to serious complications such as stroke or pulmonary embolism, depending on where they lodge. The pooling of blood not only raises the risk of thrombus formation but also exacerbates any underlying cardiac issues and affects the overall health and function of the cardiovascular system. In contrast, options such as increased oxygenation of blood, reduction in cardiac workload, or improved stroke volume are unlikely to occur when the ventricle is compromised. In fact, these scenarios would typically suggest enhanced heart function and efficiency, which does not align with the condition of blood pooling due to a weakened left ventricle. Hence, the focus on the risk of clot formation correctly identifies a significant consequence of this medical

3. What type of disease does the mumps virus cause?

- A. A respiratory infection**
- B. A gastrointestinal infection**
- C. An infectious disease that spreads through saliva**
- D. A skin disease**

The mumps virus is primarily known for causing an infectious disease characterized by swollen salivary glands, particularly the parotid glands, which are located near the jaw. The virus is transmitted through respiratory droplets and saliva, enabling it to spread easily among individuals, particularly in crowded environments. This mode of transmission aligns with the qualities of an infectious disease that spreads through saliva, making it the correct choice. Understanding the context is essential. The other options do not accurately describe the primary effects or transmission methods of the mumps virus. It is not a respiratory infection in the way that diseases like influenza or COVID-19 are classified, nor does it specifically target the gastrointestinal system. Additionally, while some infectious diseases may involve the skin, mumps does not manifest as a skin disease. Thus, recognizing the characteristics of mumps highlights its classification as an infectious disease predominantly spread through saliva, confirming the accuracy of the chosen answer.

4. Which of the following codes is associated with returning to a base location?

- A. 10-19**
- B. 10-3**
- C. 10-4**
- D. 10-7**

The code that is associated with returning to a base location is 10-19. This code is often used in communication among emergency personnel to indicate that they are en route back to their home base, whether it be a station or a designated command center. It plays a crucial role in ensuring clear and efficient communication, allowing units to inform dispatch and other responders of their status and location. In emergency response scenarios, it is important to have standardized codes to convey information quickly and clearly, optimizing response times and coordination among teams. Recognizing codes such as 10-19 helps responders operate more effectively during incidents.

5. Which triage level would be indicated by severe breathing difficulties, severe bleeding, or decreased mental status?

- A. Green**
- B. Yellow**
- C. Red**
- D. Black**

The triage level indicated by severe breathing difficulties, severe bleeding, or decreased mental status is classified as red. This designation is used for patients who are in critical condition and require immediate attention to save their lives. In triage systems, the red category prioritizes those with the most severe and life-threatening conditions, ensuring that they receive prompt medical intervention. Severe breathing difficulties necessitate immediate assessment and potential airway management, while severe bleeding poses a significant threat of shock and requires urgent treatment. Decreased mental status can indicate a range of serious issues, including neurological events or compromised circulation, both of which require swift action. In contrast, the other triage levels such as green typically represent patients with minor injuries who can wait for treatment, yellow indicates those with serious but not life-threatening conditions, and black is often used for patients who are deceased or have no chance of survival. Understanding these distinctions is crucial for effective triage in emergency situations.

6. When does a chance fracture typically occur?

- A. When the body is in a relaxed position**
- B. When the body moves forward suddenly fracturing vertebra**
- C. During repetitive stress activities**
- D. As a result of twisting motions**

A chance fracture typically occurs due to a sudden forward flexion of the spine, often in a trauma-related context, which can lead to fractures of the vertebrae. This type of injury is commonly associated with high-impact situations, such as a car accident where the body is thrown forward in a hyperflexed position, causing the vertebra to break. In a chance fracture, the mechanism involves a forward bending movement of the spine that can stress and fracture the vertebrae in a horizontal plane, particularly in the lumbar region. This is unique to chance fractures, distinguishing them from other types of vertebral fractures that might result from different motions or impacts. While a relaxed position, repetitive stress, or twisting motions can lead to different types of spinal injuries or fractures, they do not specifically describe the mechanism that leads to a chance fracture. Therefore, referencing the sudden movement forward aligns precisely with the nature of how chance fractures occur.

7. What role do buffers play in the body?

- A. They regulate body temperature
- B. They control pH balance**
- C. They store energy
- D. They transport nutrients

Buffers play a crucial role in maintaining the pH balance within the body. The human body operates optimally within a narrow pH range, typically around 7.35 to 7.45 for blood. If the pH deviates significantly from this range, it can lead to acidosis or alkalosis, both of which can disrupt various physiological processes. Buffers, which are typically comprised of weak acids and their conjugate bases, help to neutralize excess acids or bases. This ability to resist changes in pH is essential for normal cellular function and metabolic processes. For instance, the bicarbonate buffer system, one of the primary buffering systems in the body, involves carbonic acid and bicarbonate ions. This system allows the body to manage fluctuations in acidity that may occur from metabolic processes or breathing. By controlling pH balance, buffers contribute significantly to homeostasis, ensuring that the conditions in the body remain conducive to life and health.

8. What is the meaning of the code 10-19?

- A. Need assistance
- B. Respond to location
- C. Back to base**
- D. Out of county

The code 10-19 typically means "Respond to location." This code is part of a common ten-code system used in law enforcement and emergency services to communicate succinctly and clearly via radio. Each ten-code is designed to convey specific messages that can be quickly understood by those familiar with the codes. In this context, "10-19" instructs personnel to return to a specific location, often where assistance or follow-up is needed. Understanding this code is important for maintaining effective communication and ensuring that all team members are on the same page when responding to incidents or emergencies. Being aware of these codes, including the correct interpretation of 10-19, helps improve operational efficiency and enhances coordination among various agencies during critical situations.

9. What is the effect of the vagus nerve on the body?

- A. Enhances blood flow to the brain
- B. Regulates muscles of the throat and gastrointestinal tract**
- C. Controls facial expressions and taste
- D. Stimulates auditory function

The vagus nerve plays a critical role in the autonomic nervous system, predominantly influencing involuntary bodily functions. One of its primary functions is to regulate muscles of the throat and gastrointestinal tract. This regulation is crucial because it affects swallowing, the movement of food through the esophagus, and peristalsis in the intestines, which is the wave-like muscle contraction that moves contents through the digestive system. The vagus nerve also impacts various organs, including the heart and lungs, by modulating heart rate and many involuntary processes, such as digestion and respiratory rates. Its extensive reach throughout the body allows it to maintain homeostasis and ensure proper functionality of these vital systems. Other options pertain to different systems or functions that are outside the primary scope of the vagus nerve's influence. For instance, although the vagus nerve has indirect connections to the brain, it does not have a direct effect on enhancing blood flow to it. Control over facial expressions and taste is primarily regulated by different cranial nerves, specifically the facial nerve and the glossopharyngeal nerve. Lastly, while auditory function is handled by the auditory nerve, the vagus nerve does not directly stimulate this function. Understanding the pervasive influence of the vagus nerve is key.

10. Which of the following joints is an example of a saddle joint?

- A. Shoulder joint
- B. Elbow joint
- C. Thumb joint**
- D. Knee joint

The thumb joint, specifically the carpometacarpal joint of the thumb, is indeed a prime example of a saddle joint. Saddle joints are characterized by their unique morphology that allows movement in two different planes, enabling greater flexibility and range of motion compared to other types of joints such as hinge or ball-and-socket joints. In the case of the thumb, the opposing surfaces of the bones are shaped like a saddle, allowing the thumb to move back and forth and side to side, which is crucial for gripping and pinching actions. This distinctive movement capability is what sets the saddle joint apart, affirming that the thumb's anatomy supports this classification. Other joints, like the shoulder joint, elbow joint, and knee joint, do not exhibit this saddle-shaped structure nor the same range and type of movement inherent to saddle joints. The shoulder joint is a ball-and-socket joint, the elbow is primarily a hinge joint, and the knee, while somewhat complex, generally functions in a manner more akin to a hinge joint with some rotational capability. Thus, the thumb joint stands out as a quintessential example of a saddle joint due to its specific design and functional attributes.