AEMCA Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

Questions

1. What is the primary purpose of cerebrospinal fluid (CSF)?

A. To transport oxygen to the brain

B. To circulate fluid that protects, clears waste, and moves substances into brain cells

C. To facilitate blood flow

D. To regulate body temperature

2. Which of the following are abnormal substances commonly found in urine?

A. Water, urea, electrolytes

B. Albumin, glucose, blood cells

C. Protein, creatinine, uric acid

D. Sodium, potassium, chlorides

3. What key information must be included in a patch report?

A. Unit number, patient age, previous medical history

B. Patient address, vital signs, unit location

C. Unit number, patient age, CTAS level, chief complaint

D. Emergency contact, insurance details, ETA

4. What vital sign assessment timing is consistent with emergency medical protocols?

A. Every 20 minutes

B. Every 30 minutes

C. Every 45 minutes

D. Every hour

5. The staggers in diving are associated with what symptoms?

A. Severe skin rashes and dehydration.

B. Balance issues, partial deafness, vertigo, and nausea.

C. Intense muscle pain and spasms.

D. Extreme fatigue and loss of appetite.

6. How is unstable angina characterized?

- **A. Chest pain that resolves immediately with rest**
- **B. Severe chest pain at rest that does not improve with rest or medication**
- **C. Chest pain only present during sleep**
- **D. Mild discomfort felt only in the arms**

7. Which of the following is an example of airborne transmission?

- **A. Sharing a drink with an infected person**
- **B. Touching an infected surface and then your face**
- **C. Inhaling droplets from a person who is coughing**
- **D. Engaging in sexual contact with an infected partner**

8. Severe pain and constant movement to find comfort are signs of?

- **A. Pyelonephritis**
- **B. Renal colic**
- **C. Allodynia**
- **D. Testicular torsion**

9. Which component of the cell is involved in the synthesis of lipids?

- **A. Rough endoplasmic reticulum**
- **B. Smooth endoplasmic reticulum**
- **C. Cell membrane**
- **D. Peroxisomes**

10. What vessel brings blood into the right atrium from systemic circulation?

- **A. Pulmonary vein**
- **B. Aorta**
- **C. Vena cava**
- **D. Coronary sinus**

Answers

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

Explanations

1. What is the primary purpose of cerebrospinal fluid (CSF)?

A. To transport oxygen to the brain

B. To circulate fluid that protects, clears waste, and moves substances into brain cells

C. To facilitate blood flow

D. To regulate body temperature

The primary purpose of cerebrospinal fluid (CSF) is to circulate fluid that protects, clears waste, and moves substances into brain cells. CSF serves as a crucial protective cushion for the brain and spinal cord, providing physical support and absorbing shocks from external forces. Additionally, it plays a vital role in the removal of metabolic waste products from neural tissue, ensuring that the brain remains healthy and functions optimally. CSF also helps regulate the environment surrounding the brain, allowing for the transport of nutrients and signaling molecules necessary for neuronal function and health. This circulation of CSF is essential for maintaining homeostasis within the central nervous system, which is critical for proper neural function. While the other options mention functions that can be somewhat associated with brain health, they do not accurately capture the comprehensive protective and supportive roles that CSF fulfills. For example, CSF does not transport oxygen to the brain; that is primarily the role of the blood. Similarly, while blood flow is important for brain function, CSF does not facilitate this flow directly. Lastly, body temperature regulation is managed through other physiological processes and is not a direct function of CSF.

2. Which of the following are abnormal substances commonly found in urine?

A. Water, urea, electrolytes

B. Albumin, glucose, blood cells

C. Protein, creatinine, uric acid

D. Sodium, potassium, chlorides

The presence of albumin, glucose, and blood cells in urine signifies potential abnormalities and is indicative of underlying health issues. Typically, the urine consists mainly of water, urea, and electrolytes, which are normal substances; thus the first choice does not reflect abnormal findings. When albumin appears in the urine, it suggests a condition known as proteinuria, which may indicate kidney damage or disease. Similarly, the detection of glucose urine could point towards diabetes mellitus, where glucose is not adequately reabsorbed by the kidneys. Blood cells in urine can be a sign of infections, kidney stones, or other serious medical conditions, indicating that the body is responding to inflammation or injury. The third choice references protein, creatinine, and uric acid, where while protein can be abnormal, creatinine and uric acid are normal metabolic waste products typically present in urine. Lastly, the fourth choice consists solely of sodium, potassium, and chlorides, which are all normal electrolytes found in urine and demonstrate regular kidney function and dietary contributions. Thus, the correct answer highlights substances that are not typically found in a healthy urine sample and reflect potential complications or diseases that warrant further investigation.

3. What key information must be included in a patch report?

A. Unit number, patient age, previous medical history

B. Patient address, vital signs, unit location

C. Unit number, patient age, CTAS level, chief complaint

D. Emergency contact, insurance details, ETA

The inclusion of unit number, patient age, CTAS (Canadian Triage and Acuity Scale) level, and chief complaint in a patch report is vital for several reasons. Firstly, the unit number is essential as it identifies the specific ambulance or service handling the patient, ensuring accurate communication and coordination among the medical team. Secondly, patient age is critical since it can influence medical decisions and the urgency of care required. CTAS level serves as a standardized assessment tool that categorizes the urgency of a patient's condition, helping receiving healthcare facilities prioritize treatment effectively. Lastly, the chief complaint succinctly encapsulates the main reason for the patient's transfer, guiding further evaluation and treatment upon arrival at the healthcare facility. Therefore, this combination of information ensures that responders and medical personnel have a comprehensive understanding of the situation before the patient arrives, which facilitates better and faster healthcare interventions.

4. What vital sign assessment timing is consistent with emergency medical protocols?

A. Every 20 minutes

B. Every 30 minutes

C. Every 45 minutes

D. Every hour

In emergency medical protocols, vital signs are assessed regularly to monitor a patient's condition and detect any changes that may indicate deterioration. The standard practice is to check vital signs every 30 minutes, particularly in critical situations or when a patient is unstable. This frequency allows healthcare providers to swiftly identify any issues that arise and respond accordingly, ensuring timely interventions can be applied as needed. Other options reflect longer intervals that may not be suitable for an emergency medical context, where rapid assessment and response are crucial. Regular assessment of vital signs every 30 minutes strikes a balance between thorough monitoring and the practicality needed in emergency situations, which is why this timing is prevalent in emergency medical protocols.

5. The staggers in diving are associated with what symptoms?

A. Severe skin rashes and dehydration.

B. Balance issues, partial deafness, vertigo, and nausea.

C. Intense muscle pain and spasms.

D. Extreme fatigue and loss of appetite.

The symptoms associated with staggers in diving primarily include balance issues, partial deafness, vertigo, and nausea. Staggers, often linked to the effects of gas embolism or inner ear disturbances related to pressure changes during diving, can significantly impact a diver's ability to maintain their orientation and stability. When divers experience staggers, the disruption in the vestibular system leads to symptoms such as vertigo, which is a sensation of spinning or dizziness, and can result in feelings of nausea. The presence of balance issues indicates that the diver is struggling to keep their equilibrium due to the impact on their vestibular function. Partial deafness may occur due to the pressure differentials affecting the inner ear, which is critical for both hearing and balance. In the context of diving, these symptoms are serious as they can compromise a diver's safety and ability to navigate underwater effectively. The symptoms presented in the other options, such as severe skin rashes and dehydration, are not typically associated with staggers but might be linked to other conditions or issues faced by divers. Intense muscle pain and spasms can occur in cases of decompression sickness or other injuries, while extreme fatigue and loss of appetite are more general concerns that do not specifically relate to the typical

6. How is unstable angina characterized?

A. Chest pain that resolves immediately with rest

B. Severe chest pain at rest that does not improve with rest or medication

C. Chest pain only present during sleep

D. Mild discomfort felt only in the arms

Unstable angina is characterized by severe chest pain or discomfort that occurs at rest or with minimal physical activity and does not improve significantly with rest or medications such as nitroglycerin. This presentation indicates a potential worsening of coronary artery disease and suggests that the heart is not receiving adequate blood supply, which can lead to serious complications like a heart attack. The significant point about unstable angina is its unpredictable nature; it can occur at any time, including while resting or sleeping, and is often more intense than stable angina that occurs with exertion and resolves with rest. This description clarifies why the option highlighting severe chest pain at rest is correct, as it reflects the acute and concerning nature of unstable angina. In contrast, chest pain that resolves immediately with rest typically describes stable angina, while chest pain only present during sleep may relate to other conditions, such as Prinzmetal angina. Mild discomfort felt only in the arms does not adequately describe the severe nature of angina and therefore does not align with the accepted characterization of unstable angina.

7. Which of the following is an example of airborne transmission?

A. Sharing a drink with an infected person

B. Touching an infected surface and then your face

C. Inhaling droplets from a person who is coughing

D. Engaging in sexual contact with an infected partner

Airborne transmission refers specifically to the spread of pathogens through the air via droplets or aerosols that can remain suspended and travel over distances before being inhaled by a person. In this context, inhaling droplets from a person who is coughing is a classic example of airborne transmission. When someone coughs, they release respiratory droplets that can carry infectious agents; if another person inhales these droplets, they can become infected. The other choices illustrate different methods of disease transmission. Sharing a drink with an infected person indicates direct contact through saliva, which does not involve airborne particles. Touching an infected surface and then your face represents a form of contact transmission, where the pathogen is transferred from a surface to a person without the involvement of the air. Engaging in sexual contact with an infected partner involves the exchange of bodily fluids, a form of direct transmission rather than airborne. Therefore, the option highlighting inhalation of droplets from coughing is the only one that exemplifies airborne transmission accurately.

8. Severe pain and constant movement to find comfort are signs of?

A. Pyelonephritis

B. Renal colic

C. Allodynia

D. Testicular torsion

Severe pain accompanied by constant movement in search of comfort is characteristic of renal colic. This type of pain is often associated with the obstruction of the urinary tract, typically due to the presence of kidney stones. Patients experiencing renal colic commonly shift positions frequently, attempting to alleviate the intense discomfort. They may report pain that radiates from the back to the lower abdomen and even to the groin, often described as one of the most severe pains imaginable. The other conditions listed can cause pain but do not typically present with the same urgency for constant movement. Pyelonephritis usually involves less intense pain and more systemic symptoms, such as fever. Allodynia refers to pain from stimuli that do not normally provoke pain, and it is more related to neurological issues rather than a specific movement-related discomfort. Testicular torsion also presents with severe pain, but the movement is not typically constant; patients may remain still due to the severity of the situation.

9. Which component of the cell is involved in the synthesis of lipids?

A. Rough endoplasmic reticulum

B. Smooth endoplasmic reticulum

C. Cell membrane

D. Peroxisomes

The smooth endoplasmic reticulum (SER) plays a crucial role in the synthesis of lipids, including triglycerides and phospholipids. Unlike its counterpart, the rough endoplasmic reticulum, which is studded with ribosomes and primarily involved in protein synthesis, the SER lacks these ribosomes and has a more tubular structure. This unique architecture allows the smooth endoplasmic reticulum to focus on lipid metabolism and the production of steroids, as well as detoxification processes in the cell. Additionally, the smooth endoplasmic reticulum is essential for the storage and release of calcium ions, which are vital for various cellular functions. Its involvement in lipid synthesis is particularly significant in liver and adrenal cells, where large quantities of lipids are produced to meet metabolic demands. While the other options listed have their specific functions — such as the rough endoplasmic reticulum in protein synthesis, the cell membrane in providing structural support and protection, and peroxisomes in breaking down fatty acids and detoxifying harmful substances — none of these structures are primarily dedicated to lipid synthesis like the smooth endoplasmic reticulum. This distinction underscores why the smooth endoplasmic reticulum is recognized as the key component involved in lipid synthesis within the cell.

10. What vessel brings blood into the right atrium from systemic circulation?

A. Pulmonary vein

B. Aorta

C. Vena cava

D. Coronary sinus

The vessel that brings blood into the right atrium from systemic circulation is indeed the vena cava. There are actually two main venae cavae: the superior vena cava and the inferior vena cava. The superior vena cava carries deoxygenated blood from the upper body, including the head, neck, and arms, while the inferior vena cava transports deoxygenated blood from the lower body, including the legs and abdominal organs. Once this deoxygenated blood enters the right atrium, it is then directed through the tricuspid valve into the right ventricle, where it will be pumped to the lungs for oxygenation. The pulmonary vein, on the other hand, is responsible for bringing oxygenated blood from the lungs to the left atrium, and therefore does not contribute to the systemic circulation to the right atrium. The aorta is the main artery that carries oxygenated blood away from the heart to the rest of the body, making it also unrelated to the flow of deoxygenated blood entering the right atrium. The coronary sinus collects deoxygenated blood from the heart muscle itself and drains into the right atrium, but it is not involved in the systemic blood return. Therefore, the vena cava is the primary vessel responsible for returning