

Canadian Association of Medical Radiation Technologists (CAMRT) Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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SAMPLE

Questions

SAMPLE

- 1. What precautions should be taken for airborne diseases?**
 - A. N95 mask, gown, gloves, and eye protection**
 - B. Surgical mask and gloves**
 - C. No specific precautions**
 - D. Standard mask and gown**
- 2. What is considered normal blood pressure?**
 - A. 100/70**
 - B. 120/80**
 - C. 130/85**
 - D. 140/90**
- 3. Why is it essential to ensure regular maintenance of imaging equipment in clinical practice?**
 - A. To increase the workload of staff**
 - B. To ensure equipment reliability and patient safety**
 - C. To prevent the need for purchasing new equipment**
 - D. To test new imaging techniques**
- 4. What is a typical outcome of using an upside-down grid?**
 - A. Severe underexposure at the center**
 - B. Uniform exposure across the image**
 - C. Severely under exposed at the edges**
 - D. Increased exposure at the edges**
- 5. What effect does increased distance from the x-ray source have on image quality?**
 - A. It enhances the clarity of the image**
 - B. It decreases image sharpness**
 - C. It has no effect on the image quality**
 - D. It improves spatial resolution**
- 6. Tachypnea is defined as:**
 - A. Less than 10 breaths per minute**
 - B. 12 to 20 breaths per minute**
 - C. More than 20 breaths per minute**
 - D. 20 to 30 breaths per minute**

- 7. What constitutes battery in a medical context?**
- A. Touching someone without their consent**
 - B. Providing medication without proper documentation**
 - C. Informed consent being improperly obtained**
 - D. Retaining a patient for treatment against their will**
- 8. Which protective measures are recommended during fluoroscopy exams?**
- A. Minimizing patient movement**
 - B. Use of lead barriers and protective clothing**
 - C. Increasing exposure time**
 - D. Using only digital imaging**
- 9. What is the purpose of using protective shielding during imaging?**
- A. To enhance image quality**
 - B. To protect patients and staff from unnecessary radiation exposure**
 - C. To increase imaging speed**
 - D. To reduce costs**
- 10. What is the primary role of a Medical Radiation Technologist (MRT) in patient care?**
- A. To administer anesthesia during procedures**
 - B. To perform medical imaging procedures and ensure patient safety and comfort**
 - C. To conduct laboratory tests for diagnosis**
 - D. To provide physical therapy to patients**

Answers

SAMPLE

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

SAMPLE

Explanations

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1. What precautions should be taken for airborne diseases?

A. N95 mask, gown, gloves, and eye protection

B. Surgical mask and gloves

C. No specific precautions

D. Standard mask and gown

For airborne diseases, the recommended precautions are critical to prevent the transmission of pathogens that can be spread through the air. The use of an N95 mask is specifically important because it is designed to filter out small particles, including those that may carry airborne viruses or bacteria. This level of filtration is necessary because airborne diseases can be transmitted over longer distances and through the air, making standard masks insufficient. In addition to the N95 mask, wearing a gown, gloves, and eye protection provides a comprehensive level of personal protective equipment (PPE). The gown protects against contamination from droplets or contact with infectious materials, while gloves prevent hand contact with potentially infectious surfaces or materials. Eye protection is essential to shield the mucous membranes from splashes or droplets, which is particularly important in a healthcare setting where exposure to body fluids is possible. This combination of protective gear is crucial for ensuring the safety of healthcare workers and minimizing the risk of infection when caring for patients with airborne diseases. The other options do not provide adequate protection, particularly in environments where the risk of airborne transmission is significant.

2. What is considered normal blood pressure?

A. 100/70

B. 120/80

C. 130/85

D. 140/90

Normal blood pressure is generally defined as a reading of around 120/80 mmHg. This measurement is recognized as the benchmark for optimal cardiovascular health. The first number (systolic pressure) measures the pressure in your arteries when your heart beats, while the second number (diastolic pressure) measures the pressure in your arteries when your heart rests between beats. A reading of 120/80 mmHg indicates a healthy balance between systolic and diastolic pressures. Readings consistently below this, while they might be deemed safe, could signify low blood pressure, and readings above can indicate prehypertension or hypertension, which are associated with increased health risks. Therefore, a blood pressure of 120/80 mmHg is widely accepted as the ideal target for adults, making this option the correct response in the context of identifying what is considered normal blood pressure.

3. Why is it essential to ensure regular maintenance of imaging equipment in clinical practice?

- A. To increase the workload of staff**
- B. To ensure equipment reliability and patient safety**
- C. To prevent the need for purchasing new equipment**
- D. To test new imaging techniques**

Regular maintenance of imaging equipment is crucial primarily to ensure equipment reliability and patient safety. Imaging equipment, such as MRI machines, CT scanners, and X-ray machines, plays a vital role in diagnosing and treating patients. Proper maintenance helps to ensure that these machines operate at optimal performance levels, producing high-quality images for accurate diagnoses. Additionally, regular maintenance can identify potential issues before they escalate into significant problems that could result in equipment failure during patient procedures. This proactive approach minimizes the risk of accidents or errors, directly contributing to safer environments for both patients and healthcare providers. Ensuring patient safety is paramount in healthcare, and well-maintained equipment is essential in providing that safety. While there may be other benefits to maintenance, such as potentially reducing the frequency of equipment purchases, these are secondary to the primary goal of reliability and safety in patient care.

4. What is a typical outcome of using an upside-down grid?

- A. Severe underexposure at the center**
- B. Uniform exposure across the image**
- C. Severely under exposed at the edges**
- D. Increased exposure at the edges**

Using an upside-down grid can lead to a phenomenon known as the edge effect or grid cut-off. This occurs when the primary x-ray beam is misaligned with the grid, which is designed to reduce scatter radiation and improve image quality. When the grid is turned upside down, the alignment is compromised, causing a significant reduction in exposure at the edges of the image. The correct answer points to severely underexposed areas at the edges due to the incorrect orientation of the grid, which prevents the necessary x-rays from reaching the image receptor effectively. This misalignment leads to a decreased amount of radiation at the edges while the center may receive more consistent exposure, resulting in a contrast where the center appears adequately exposed, but the periphery is significantly darker. Understanding this principle is crucial for technologists to ensure optimal imaging outcomes and avoid artifacts caused by equipment misalignment.

5. What effect does increased distance from the x-ray source have on image quality?

- A. It enhances the clarity of the image**
- B. It decreases image sharpness**
- C. It has no effect on the image quality**
- D. It improves spatial resolution**

Increased distance from the x-ray source affects image quality primarily by decreasing image sharpness. This phenomenon can be explained by the principles of radiographic geometry, particularly the inverse square law, which states that the intensity of radiation decreases as the distance from the source increases. As this distance enlarges, the x-ray beam diverges more, leading to a larger area of exposure on the detector or film. Consequently, structures that are meant to be sharp can appear more blurred due to this increased divergence. Additionally, the increased distance can result in a reduction in the overall amount of radiation reaching the detector, which may impact the overall density and contrast of the image. While some attributes of image quality may change slightly with distance, the principal effect is that sharpness diminishes as the x-ray source is moved further away, leading to less defined boundaries between adjacent structures. This is particularly crucial in radiographic imaging, where high clarity is essential for accurate diagnosis and evaluation.

6. Tachypnea is defined as:

- A. Less than 10 breaths per minute**
- B. 12 to 20 breaths per minute**
- C. More than 20 breaths per minute**
- D. 20 to 30 breaths per minute**

Tachypnea refers to an abnormally rapid breathing rate, which is characterized by more than 20 breaths per minute. This condition can occur due to various factors such as fever, anxiety, or respiratory disorders, and is significant because it indicates that the body may be trying to increase oxygen intake or eliminate carbon dioxide more rapidly. The prevalence of a respiratory rate greater than 20 breaths per minute is clinically recognized as tachypnea in both adults and children. Understanding this definition is critical for healthcare professionals, as it helps in identifying respiratory distress or other underlying health issues promptly.

7. What constitutes battery in a medical context?

- A. Touching someone without their consent**
- B. Providing medication without proper documentation**
- C. Informed consent being improperly obtained**
- D. Retaining a patient for treatment against their will**

In the medical context, battery is commonly understood as the unauthorized touching of an individual, which typically implies that the action is performed without that person's consent. This definition emphasizes the legal and ethical obligation of healthcare professionals to respect the autonomy and personal space of their patients. When a healthcare provider touches a patient for any procedure or examination without explicit consent, it is considered battery because it violates the patient's rights. Consent should be informed, voluntary, and given by the individual who is of sound mind. While the other options describe situations that may involve ethical violations or malpractice, they do not directly define battery. Providing medication without proper documentation could relate to negligence or malpractice, while improper obtaining of informed consent involves informed consent processes rather than physical contact. Retaining a patient against their will could invoke legal issues around false imprisonment rather than battery.

8. Which protective measures are recommended during fluoroscopy exams?

- A. Minimizing patient movement**
- B. Use of lead barriers and protective clothing**
- C. Increasing exposure time**
- D. Using only digital imaging**

During fluoroscopy exams, the use of lead barriers and protective clothing is essential to protect both the patient and healthcare providers from unnecessary radiation exposure. Lead barriers can be positioned to shield parts of the body that are not being imaged, thereby reducing radiation dose. Protective clothing, such as lead aprons and thyroid shields, acts as a physical barrier against scattered radiation, offering an additional layer of safety. In fluoroscopy, where continuous imaging is used to visualize body structures and movements in real time, the potential for radiation exposure is heightened. The incorporation of lead barriers and protective attire helps mitigate the risks associated with this exposure, promoting a safer environment during the procedure. Other methods to minimize radiation exposure, while important, do not provide the same level of direct physical protection as lead barriers and clothing. Options like minimizing patient movement or using digital imaging have their own benefits, but they do not directly equate to the immediate physical protection that lead barriers and protective clothing offer during the examination. Ultimately, the emphasis on protective measures is critical in maintaining safety standards during fluoroscopy.

9. What is the purpose of using protective shielding during imaging?

- A. To enhance image quality
- B. To protect patients and staff from unnecessary radiation exposure**
- C. To increase imaging speed
- D. To reduce costs

The use of protective shielding during imaging primarily serves to protect patients and staff from unnecessary radiation exposure. In medical imaging procedures, such as X-rays and fluoroscopy, radiation is utilized to obtain diagnostic information. However, radiation can have harmful effects, particularly with repeated exposure. By employing protective shielding, such as lead aprons or shields, the amount of radiation that reaches sensitive parts of the body can be significantly reduced. This is crucial not only for the well-being of patients but also for healthcare workers who may be exposed to radiation frequently in their line of work. Enhancing image quality is not the primary goal of protective shielding; rather, it sometimes might slightly affect the image quality due to the presence of the shield. Increasing imaging speed is unrelated to shielding, as shields do not influence how quickly images are processed. Similarly, while reducing costs may be a consideration in a broader sense, protective shielding does not directly lower the cost of imaging procedures but rather addresses safety and health concerns for all individuals involved. These points reinforce the importance of protective shielding in minimizing radiation exposure in a healthcare setting.

10. What is the primary role of a Medical Radiation Technologist (MRT) in patient care?

- A. To administer anesthesia during procedures
- B. To perform medical imaging procedures and ensure patient safety and comfort**
- C. To conduct laboratory tests for diagnosis
- D. To provide physical therapy to patients

The primary role of a Medical Radiation Technologist (MRT) in patient care is to perform medical imaging procedures and ensure patient safety and comfort. MRTs are highly trained professionals who specialize in operating imaging equipment such as X-ray, MRI, ultrasound, and CT scans. Their expertise is critical in obtaining high-quality images that assist healthcare providers in diagnosing and treating medical conditions. In addition to the technical skills involved in operating imaging equipment, MRTs prioritize the safety and comfort of patients throughout the imaging process. This includes explaining procedures to patients, addressing their concerns, ensuring proper positioning, and using protective measures, such as lead aprons, to minimize radiation exposure. The other roles listed do not align with the primary responsibilities of an MRT. Administering anesthesia is typically performed by anesthesiologists or medical doctors. Conducting laboratory tests for diagnosis is the domain of medical laboratory technologists, while providing physical therapy is a specialized function carried out by physiotherapists. Thus, the focus of an MRT is firmly rooted in medical imaging and patient care related to that area.