Surgical Technology Certification Practice Exam (Sample)

Study Guide

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Questions

1. What degrees Celsius is the steam sterilization biological indicator incubated?

A. 43-48

B. 49-54

C. 55-60

D. 61-66

2. A hip cast from waist to toes on the affected side and from the waist to knee on the unaffected side is called what?

A. cylinder cast

B. long limb cast

C. body cast

D. spica cast

3. What is an important consideration when sterilizing instruments after a cystoscopy?

A. Instruments should be sterilized individually

B. All parts must be disassembled

C. Instruments should be stored in a closed container

D. Instruments can remain assembled

4. A burn that involves the epidermis and part of the dermis is classified as?

A. First degree

B. Second degree

C. Third degree

D. Fourth degree

5. Which of the following retractors is used for spinal nerve roots?

A. Taylor

B. Love

C. Cushing

D. Meyerding

6. Which precaution should be taken when working with polymethyl methacrylate as a bone cement?

A. Wear latex free gloves, as polymethyl methacrylate interacts negatively with latex

B. Remove contact lenses as polymethyl methacrylate can melt contact lenses and cause corneal burns

C. Ensure the patient does not have a latex allergy because polymethyl methacrylate and latex have the same chemical properties

D. Limit the number of sponges on the field as polymethyl methacrylate can negatively interact with the cotton fibers in the sponges

7. The cartilaginous nasal septum is anterior to which bone?

A. Hyoid

B. Vomer

C. Mandible

D. Palatine

8. What is the typical method used to achieve hemostasis during laparoscopic surgery?

A. Clamping

B. Electrosurgery

C. Direct pressure

D. Ligating clips

9. What is the name of the small fine needle holder used in plastic surgery?

A. Ryder

B. Heaney

C. Webster

D. Castroviejo

10. When performing a laparoscopic procedure, the Hulka instrument is used for what task?

A. Manipulating the stomach

B. Manipulating the uterus

C. Retracting the diaphragm

D. Holding the bladder

Answers

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

Explanations

1. What degrees Celsius is the steam sterilization biological indicator incubated?

A. 43-48

B. 49-54

C. 55-60

D. 61-66

The steam sterilization biological indicator is incubated at temperatures between 55 and 60 degrees Celsius to effectively promote the growth of any surviving microorganisms after the sterilization process. This temperature range is optimal for detecting the viability of the spores used in the biological indicator, which typically include highly resistant bacteria such as Bacillus stearothermophilus. Incubating at this temperature allows for accurate results that determine whether the sterilization process has been successful and ensures the safety and sterility of surgical instruments. The other temperature ranges suggested do not provide the optimal conditions for spore growth needed to confirm the efficacy of the steam sterilization process.

2. A hip cast from waist to toes on the affected side and from the waist to knee on the unaffected side is called what?

A. cylinder cast

B. long limb cast

C. body cast

D. spica cast

A hip cast that extends from the waist to the toes on the affected side and from the waist to the knee on the unaffected side is known as a spica cast. This type of cast is specifically designed to immobilize the hip and lower limb, typically in cases of fractures or surgical repairs in pediatric or adult patients. The spica cast is used to ensure that the hip and proximal femur remain stable while they heal, restricting movement effectively. The design of the cast serves a dual purpose: it provides support to the affected limb while also allowing for some mobility in the opposite limb, which is particularly important for certain patient populations. In contrast, options such as the cylinder cast, long limb cast, and body cast refer to different types of orthopedic casts that provide varying levels and areas of immobilization. A cylinder cast typically encases a cylindrical area of the limb, while a long limb cast covers a larger portion of the limb but not in the specific manner described. A body cast encompasses a larger section of the trunk and limbs, serving a different function altogether. The unique structure of the spica cast is what best matches the description given in the question.

3. What is an important consideration when sterilizing instruments after a cystoscopy?

A. Instruments should be sterilized individually

B. All parts must be disassembled

C. Instruments should be stored in a closed container

D. Instruments can remain assembled

Disassembling all parts of instruments after a procedure like cystoscopy is crucial because it ensures that every component receives adequate exposure to the sterilization process. Instruments often consist of various parts that can harbor blood, tissue, or other contaminants. If instruments are not disassembled, there may be pockets or crevices where bacteria or other pathogens can survive the sterilization process. Furthermore, certain instruments may have delicate parts or complex mechanisms that require thorough cleaning and sterilization to prevent infection during future surgical procedures. By disassembling, it becomes easier to clean each part effectively, leading to a higher standard of hygiene and safety. The other choices do not prioritize the proper sterilization process as effectively; for example, sterilizing instruments individually may not be necessary if they are properly disassembled. Storing instruments in a closed container after they have been sterilized is important, but it does not influence the sterilization process itself. Lastly, leaving instruments assembled can create challenges in achieving complete sterilization. Thus, disassembly stands out as an essential step in the overall sterilization protocol.

4. A burn that involves the epidermis and part of the dermis is classified as?

A. First degree

B. Second degree

C. Third degree

D. Fourth degree

A burn that involves the epidermis and part of the dermis is classified as a second-degree burn. This type of burn is characterized by its impact on both the outer layer of skin (epidermis) and a portion of the underlying layer (dermis). Second-degree burns typically result in symptoms that include redness, swelling, and blisters, often causing significant pain due to irritation of nerve endings in the dermis. These burns can affect the function of the skin by impairing its barrier capability, which is essential for protecting the body from infection and maintaining fluid balance. In contrast, first-degree burns only impact the epidermis and usually heal without scarring, while third-degree burns extend through the dermis into deeper tissues and may not be painful due to nerve destruction. Fourth-degree burns go even deeper, affecting muscles and bones. Therefore, the classification of second-degree accurately reflects the combination of layers affected in this type of burn.

5. Which of the following retractors is used for spinal nerve roots?

A. Taylor

B. Love

C. Cushing

D. Meyerding

The Love retractor is specifically designed for use in spinal surgeries, particularly for retraction of spinal nerve roots. Its unique design allows for a secure and stable hold on the delicate structures of the spine without causing damage. This is crucial during procedures where access to the spinal column is necessary while minimizing trauma to surrounding tissues. In spinal surgeries, the protection of the nerve roots is paramount, and the Love retractor's construction—often featuring a wider blade and the ability to provide more gentle retraction—makes it ideal for this purpose. This allows surgeons to maintain a clear view of the surgical site and perform necessary manipulations without compromising the integrity of the nerve roots. The other retractors mentioned do not have the specific design or functionality suited for spinal nerve root protection. For example, the Taylor retractor is generally used in abdominal surgeries and not specifically designed for spinal applications, while the Cushing retractor is primarily used for neurosurgical procedures involving the brain rather than the spinal column. Meyerding retractors are also used for general retraction in various surgeries but are not tailored for the specific needs of spinal surgery.

6. Which precaution should be taken when working with polymethyl methacrylate as a bone cement?

A. Wear latex free gloves, as polymethyl methacrylate interacts negatively with latex

B. Remove contact lenses as polymethyl methacrylate can melt contact lenses and cause corneal burns

C. Ensure the patient does not have a latex allergy because polymethyl methacrylate and latex have the same chemical properties

D. Limit the number of sponges on the field as polymethyl methacrylate can negatively interact with the cotton fibers in the sponges

When working with polymethyl methacrylate (PMMA) as a bone cement, removing contact lenses is crucial because PMMA can indeed melt lenses, which poses a significant risk of corneal burns and serious eye injuries. This is due to the exothermic reaction that occurs during the polymerization of PMMA, generating heat that can affect soft materials, including contact lenses. Thus, ensuring the safety of the surgical team and the patient requires this precaution to prevent prolonged exposure of the eyes to hazardous materials. Other options discuss interactions with latex, allergies, and surgical sponges, but they do not highlight the immediate and severe risk posed by PMMA to contact lenses, making option B the most critical precaution in this context.

7. The cartilaginous nasal septum is anterior to which bone?

A. Hyoid

B. Vomer

C. Mandible

D. Palatine

The cartilaginous nasal septum is comprised primarily of hyaline cartilage and serves as a division between the right and left nasal cavities. Anatomically, it is situated anteriorly to the vomer bone, which forms the posterior and inferior part of the nasal septum. The vomer is a thin, plow-shaped bone that contributes to the support of the nasal septum, making it a key element in the nasal structure. Understanding this relationship is crucial because it highlights the importance of various structures in the nasal cavity's anatomy. The vomer, being posterior to the cartilaginous portion, indicates how the nasal septum is both a functional and structural component of the nasal passages. The other bones listed, such as the hyoid, mandible, and palatine, do not have a direct anatomical relationship with the nasal septum in the context of being located directly posterior to it. Therefore, the correct answer is grounded in the anatomical positioning and functional role of the vomer in supporting the structure of the nasal septum and delineating the anatomy of the nasal passages.

8. What is the typical method used to achieve hemostasis during laparoscopic surgery?

A. Clamping

B. Electrosurgery

C. Direct pressure

D. Ligating clips

The typical method used to achieve hemostasis during laparoscopic surgery is electrosurgery. This technique is favored in minimally invasive procedures due to its effectiveness in cutting tissues and coagulating blood vessels simultaneously. Electrosurgery utilizes electrical currents to generate heat, which can effectively seal blood vessels, thereby minimizing blood loss during surgery. Using electrosurgery allows surgeons to perform procedures more efficiently and safely in the confined space of the abdomen, where visibility and access can be limited. It provides precision, helping to avoid damage to surrounding tissues while ensuring that hemostatic control is maintained throughout the procedure. Other methods, while they may be used in different contexts or for different applications, do not provide the same level of precision and efficiency in a laparoscopic setting. For instance, clamping may be useful for certain open procedures but isn't as practical in laparoscopic methods due to access restrictions. Direct pressure can control bleeding but is not a reliable long-term solution during surgical interventions. Ligating clips are also utilized to secure blood vessels, yet they are generally considered supplementary to the primary method of electrosurgery in laparoscopic procedures.

9. What is the name of the small fine needle holder used in plastic surgery?

A. Ryder

B. Heaney

C. Webster

D. Castroviejo

The small fine needle holder commonly used in plastic surgery is known as the Castroviejo. This instrument is specifically designed for delicate suturing, particularly in procedures requiring precision, such as those found in plastic and reconstructive surgery. The Castroviejo needle holder features a slender profile and a locking mechanism that allows for a secure grip on very fine needles without crushing them, making it ideal for intricate stitching in sensitive areas. Other instruments listed might be used in various surgical contexts, but they do not match the specific requirements and design characteristics that make the Castroviejo suitable for the nuanced work in plastic surgery. Understanding the unique applications and designs of surgical instruments is essential for their effective use in various types of surgeries.

10. When performing a laparoscopic procedure, the Hulka instrument is used for what task?

A. Manipulating the stomach

B. Manipulating the uterus

C. Retracting the diaphragm

D. Holding the bladder

The Hulka instrument is specifically designed for manipulating the uterus during laparoscopic procedures. This instrument is often utilized in gynecological surgeries, such as laparoscopic hysterectomies or tubal ligation. Its unique design allows for easier access and maneuverability around the uterus, which is essential during surgical interventions that require precision. In contrast, the other options do not align with the primary function of the Hulka instrument. Manipulating the stomach would not typically involve this tool, as the anatomy and procedural requirements differ significantly. Retracting the diaphragm is managed with different types of retractors that are specifically designed for that area, while holding the bladder requires instruments meant for that anatomical region, which the Hulka does not provide. This highlights the specificity of surgical instruments to particular tasks, which is crucial for effective surgical outcomes.