Austin Training Entrance Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

Questions

1. **When optimizing programming in Burst, amplitude should be decreased by what percentage of the energy required for patient perception?**

   A. 20%

   B. 30%

   C. 40%

   D. 60%

2. **What materials are the electrodes on perc and paddle leads made from?**

   A. Gold and silver

   B. Platinum and iridium

   C. Nickel and copper

   D. Carbon and aluminum

3. **What is the primary purpose of using RF generators in medical procedures?**

   A. Primary pain relief

   B. Destruction of neurolytic tissue

   C. Improved imaging technology

   D. Shortening recovery time

4. **How many leads can the DRG EPG accommodate?**

   A. 1

   B. 2

   C. 3

   D. 4

5. **What is an appropriate method to decrease the amplitude for Burst programming?**

   A. By a constant factor

   B. By a percentage of the energy threshold

   C. By patient demand

   D. Algorithmically adjusted

6. Which of the following is NOT a type of lesion pattern used with the Simplicity device?

A. Bipolar lesion at proximal electrode

B. Monopolar lesion at distal electrode

C. Bipolar lesion between distal and medial electrodes

D. Monopolar lesion at the base electrode

7. What is the BOLD guarantee related to?

A. Warranty on device lifespan regardless of use

B. 5 year warranty on battery life with specific protocols

C. Lifetime warranty on all electric devices

D. Unlimited battery lifetime guarantee

8. An injury to the ilioinguinal nerve would be classified under which type of CRPS?

A. Type I

B. Type II

C. Both Type I and II

D. Neither Type I nor Type II

9. What type of pain is characterized by a painful response despite a non-painful stimulus?

A. Paresthesia

B. Allodynia

C. Hyperalgesia

D. Neuropathic pain

10. Does running the RF generator at a temperature below 45 degrees have any measurable effect?

A. Yes, it enhances performance

B. No, it does not

C. Yes, it reduces resistance

D. No, it increases output

Answers

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

Explanations

1. When optimizing programming in Burst, amplitude should be decreased by what percentage of the energy required for patient perception?

A. 20%

B. 30%

C. 40%

D. 60%

The correct response highlights that when optimizing programming in Burst, the amplitude should be decreased by 40% of the energy required for patient perception to achieve the desired therapeutic effect while maintaining comfort and safety. This percentage is grounded in research and clinical practices that suggest a balance between adequate stimulation for therapeutic benefits and minimizing sensory overload or discomfort for the patient. Decreasing the amplitude by this specific percentage ensures that the energy delivered is sufficient for the desired therapeutic outcome without overwhelming the patient's perception. This practice is particularly important in settings where patient tolerance and response to stimulation can vary significantly. By adhering to this guideline, practitioners can fine-tune the programming to optimize the therapeutic effects while maximizing patient comfort and adherence to treatment. Other percentages would not align with the optimal range established in clinical guidelines, which could either lead to ineffective stimulation or unnecessary discomfort for the patient. Thus, the chosen percentage is based on validated clinical insights and helps ensure effective programming strategies in Burst therapies.

2. What materials are the electrodes on perc and paddle leads made from?

A. Gold and silver

B. Platinum and iridium

C. Nickel and copper

D. Carbon and aluminum

The electrodes on perc and paddle leads are made from platinum and iridium due to their exceptional properties that make them suitable for electrical applications. Platinum is known for its excellent conductivity, resistance to corrosion, and stability at high temperatures, making it a reliable choice for electrodes that can be subjected to a variety of environmental conditions and voltages. Iridium, often alloyed with platinum, enhances durability and further improves the corrosion resistance of the electrode. This combination leads to long-lasting and efficient performance in applications where precision and reliability are critical, such as in medical devices or specialized sensors. Other materials listed, such as gold and silver, while also conductive, do not possess the same level of durability and resistance to environmental factors as platinum and iridium. Nickel and copper are commonly used in many electrical applications, but they are prone to oxidation which can impair their performance over time. Carbon and aluminum are not typically found in high-precision electrode applications due to their lower conductive properties compared to platinum and iridium. Thus, platinum and iridium are the optimal choice for ensuring consistent and reliable operation of perc and paddle leads.

3. What is the primary purpose of using RF generators in medical procedures?

A. Primary pain relief

B. Destruction of neurolytic tissue

C. Improved imaging technology

D. Shortening recovery time

The primary purpose of using RF generators in medical procedures is indeed the destruction of neurolytic tissue. Radiofrequency (RF) generators produce electrical energy that, when applied to tissues, generates heat. This heat can be precisely controlled to target and destroy specific tissues, such as nerves that are responsible for transmitting pain signals. This technique is commonly utilized in procedures such as radiofrequency ablation, which is frequently employed for chronic pain management and various other medical conditions. The ability to selectively destroy neurolytic tissue allows for effective pain relief strategies without requiring more invasive surgical procedures. This method can also have a lasting effect on pain relief, significantly improving patients' quality of life. Other options, such as primary pain relief, improved imaging technology, and shortening recovery time, are related to the outcomes or benefits of the procedures but do not define the core function of RF generators. While pain relief can be a result of using RF generators, it is an outcome rather than the primary function. Similarly, improved imaging technology is not associated with RF generators; rather, imaging typically relies on modalities like MRI or CT scans. Finally, while shorter recovery times can be a benefit of minimally invasive techniques, the principal purpose of RF generators remains the targeted destruction of tissue.

4. How many leads can the DRG EPG accommodate?

A. 1

B. 2

C. 3

D. 4

The DRG EPG is designed to accommodate two leads, which allows for more versatile and comprehensive monitoring compared to systems that can handle only one lead. This capability enables greater flexibility in assessing cardiac function and enhances the ability to detect arrhythmias or other cardiac events simultaneously from two different sites. By having the capacity for two leads, healthcare providers can obtain a more comprehensive view of the heart's activity, aiding in better diagnosis and treatment decisions. The ability to use two leads effectively increases the reliability and accuracy of the information obtained from the monitoring device.

5. What is an appropriate method to decrease the amplitude for Burst programming?

A. By a constant factor

B. By a percentage of the energy threshold

C. By patient demand

D. Algorithmically adjusted

Decreasing the amplitude for Burst programming by a percentage of the energy threshold is appropriate because it allows for a more precise and tailored adjustment based on the specific needs of the patient and their condition. This method takes into account the individual patient's response to therapy and the energy levels required for effective stimulation. Using a percentage of the energy threshold ensures that changes are proportionate and maintain efficacy in the stimulation. This approach allows for finer control, helping clinicians to optimize patient comfort and therapeutic outcomes without drastically reducing the amplitude to the point of inefficacy. The other methods, while they may seem plausible, do not offer the same level of customization and may not provide the necessary range of flexibility during treatment. For example, adjusting by a constant factor does not account for variations in energy threshold that can differ from person to person or change over time. Patient demand can be too subjective and may not reflect actual physiological needs. Algorithmically adjusted methods may not always align with the unique clinical requirements for each patient, lacking the nuance that percentage adjustments offer.

6. Which of the following is NOT a type of lesion pattern used with the Simplicity device?

A. Bipolar lesion at proximal electrode

B. Monopolar lesion at distal electrode

C. Bipolar lesion between distal and medial electrodes

D. Monopolar lesion at the base electrode

The correct answer indicates that a monopolar lesion at the base electrode is not recognized as a type of lesion pattern utilized with the Simplicity device. In the context of the Simplicity device, lesion patterns are typically categorized into bipolar and monopolar configurations, where each has distinct placement of electrodes serving specific functional purposes. Bipolar lesions involve two electrodes working together to produce a lesion in a certain area, often allowing for more targeted energy delivery. Monopolar lesions, on the other hand, utilize one active electrode while a grounding reference, or return electrode, is elsewhere, which can result in broader lesions. In this case, the configurations involving bipolar lesions are valid and widely used within the device's functionality. The case of a monopolar lesion at the base electrode does not align with standard practices or established patterns within the device. Therefore, it's deemed as not fitting into the recognized lesion types for the Simplicity device, which is why it's appropriate to identify it as the correct answer. This distinction highlights the specialized application of different electrode placements and energy delivery methods in creating lesions for medical procedures.

7. What is the BOLD guarantee related to?

A. Warranty on device lifespan regardless of use

B. 5 year warranty on battery life with specific protocols

C. Lifetime warranty on all electric devices

D. Unlimited battery lifetime guarantee

The BOLD guarantee specifically pertains to a 5-year warranty on battery life, contingent upon adherence to specific usage protocols. This means that if the user follows the defined operational guidelines, they can expect the battery to perform effectively for that duration. This type of guarantee emphasizes the importance of correct usage and maintenance to ensure optimal lifespan and performance of the battery, which is a crucial component in devices relying on rechargeable technology. The other options suggest broader or unrealistic guarantees, such as lifetime warranties or unlimited battery lifetimes, which do not typically exist in the industry. Such guarantees would likely not be feasible given the nature of battery degradation over time and use. Therefore, B accurately reflects a realistic warranty that aligns with typical practices in the electronics industry while providing customers some peace of mind when it comes to battery longevity under prescribed conditions.

8. An injury to the ilioinguinal nerve would be classified under which type of CRPS?

A. Type I

B. Type II

C. Both Type I and II

D. Neither Type I nor Type II

The classification of Complex Regional Pain Syndrome (CRPS) into Type I and Type II is based on the presence or absence of identifiable nerve injury. Type I CRPS, formerly known as reflex sympathetic dystrophy (RSD), typically occurs after an injury without a specific nerve injury, while Type II, formerly termed causalgia, is associated with a distinct nerve injury. When considering an injury to the ilioinguinal nerve, it represents a clear example of a known nerve injury. This aligns with the defining characteristics of Type II CRPS, where symptoms arise as a direct consequence of damage to a nerve, leading to specific changes such as pain, swelling, and sensory changes in the affected area. Therefore, an injury to the ilioinguinal nerve is classified as Type II because it satisfies the criteria of being linked to a specific nerve injury. In contrast, Type I would not apply here, as the presence of a nerve injury points clearly to Type II. Thus, the correct classification for an injury to the ilioinguinal nerve is indeed Type II CRPS.

9. What type of pain is characterized by a painful response despite a non-painful stimulus?

A. Paresthesia

B. Allodynia

C. Hyperalgesia

D. Neuropathic pain

The type of pain characterized by a painful response despite a non-painful stimulus is known as allodynia. This phenomenon occurs when a person experiences pain from stimuli that typically do not cause pain, such as light touch or temperature changes. Allodynia is often associated with various chronic pain conditions and can result from mechanisms such as central sensitization, where the nervous system becomes overly responsive to stimuli. In contrast, other terms describe different pain experiences. Paresthesia refers to an abnormal sensation, such as tingling or prickling, often without any actual painful response. Hyperalgesia involves an increased sensitivity to pain—where a painful stimulus feels more painful than it normally would—but does not involve a non-painful stimulus being perceived as painful, as seen in allodynia. Neuropathic pain is caused by damage or dysfunction in the nervous system and can present with various sensations, but it is not defined by the response to non-painful stimuli in the way allodynia is. Thus, recognizing allodynia is key for understanding how certain pain responses can arise from non-painful triggers.

10. Does running the RF generator at a temperature below 45 degrees have any measurable effect?

A. Yes, it enhances performance

B. No, it does not

C. Yes, it reduces resistance

D. No, it increases output

Running the RF generator at a temperature below 45 degrees might indeed have implications for its performance, but the consensus indicates that these lower temperatures do not provide a measurable enhancement in performance. In fact, operational efficiency and output stability can be affected by temperature fluctuation. Most RF systems are designed to operate within specified temperature ranges, and performance may plateau or even degrade outside of those optimal conditions. Therefore, while one might assume that operating below 45 degrees could lead to varying physical responses, including potential changes in the resistance or output, the result typically observed is a lack of beneficial impact under those cooler conditions. This highlights the importance of adhering to the manufacturer's guidelines on operational temperatures for optimal functionality and performance stability.