American Board of Dental Examiners (ADEX) Dental Hygiene Licensing Practice Exam (Sample)

Study Guide

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Questions

1. What is the minimum width of a lingual bar in RPD design?

A. 3 mm

B. 4 mm

C. 5 mm

D. 6 mm

2. What is the primary concern regarding the placement of guide planes?

A. Stability of the framework

B. Functionality of the denture

C. Prevention of lateral movement

D. Support to the teeth

3. What is a hallmark genetic marker associated with Chronic Myelogenous Leukemia (CML)?

A. Philadelphia chromosome

B. BRCA1 mutation

C. TP53 mutation

D. JAK2 mutation

4. Which type of impression material is hydrophobic and sensitive to temperature?

A. Polysulfide

B. PVS

C. Polyether

D. Alginate

5. What are the recommended dimensions for cingulum rest depths?

A. 1 mm wide, 1 mm deep

B. 2 mm wide (F-L), 2.5-3 mm (M-D), 1 mm deep

C. 2 mm wide (F-L), 2.5-3 mm (M-D), 1.5 mm deep

D. 2 mm wide (F-L), 2.5-3 mm (M-D), 2 mm deep

6. What line should the inferior surface of the maxillary occlusal rim be parallel to?

A. Frankfort Horizontal Plane

B. Camper's Line (Ala-tragus Line)

C. Inter-occlusal Plane

D. Mandibular Plane

7. What is the depth of the rest seat in the center of the tooth?

A. 1 mm

B. 1.5 mm

C. 2 mm

D. 2.5 mm

8. In which type of melanoma does there typically not exist a radial growth phase?

A. Superficial spreading

B. Nodular

C. Lentigo maligna

D. Acral lentiginous

9. What characterizes a Kennedy Class I dentition?

A. Unilateral distal extension

B. Bilateral distal extension

C. Entirely tooth-borne

D. Edentulous area anterior to remaining teeth

10. Which type of cyst is characterized as the second most common cyst in the oral cavity?

A. Odontogenic keratocyst

B. Dentigerous cyst

C. Nasal palatine duct cyst

D. Globulomaxillary cyst

Answers

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

Explanations

1. What is the minimum width of a lingual bar in RPD design?

A. 3 mm

B. 4 mm

C. 5 mm

D. 6 mm

In the design of a removable partial denture (RPD), the lingual bar serves as a critical component for the support and stability of the prosthesis, particularly when used in mandibular applications. The minimum width of a lingual bar is established at 4 mm to ensure adequate strength and comfort for the patient. A width of 4 mm strikes a balance between providing sufficient rigidity to resist deformation under occlusal forces while also maintaining a comfortable fit against the tissues of the mouth. Additionally, this dimension helps to prevent potential irritation or discomfort that could arise from a bar that is either too narrow or too wide, which can lead to tissue impingement. In practice, a lingual bar must also adhere to other anatomical and physiological considerations, including the space available in the oral cavity and the specific contour of the patient's lingual tissue. These factors guide dental professionals in making choices about the most appropriate design for each individual case.

2. What is the primary concern regarding the placement of guide planes?

A. Stability of the framework

B. Functionality of the denture

C. Prevention of lateral movement

D. Support to the teeth

The primary concern regarding the placement of guide planes relates closely to the functionality of the denture. Guide planes are typically established to aid in the proper positioning and retention of removable prosthetics, ensuring that the denture fits well against the underlying tissues and remains stable during function. Placement of guide planes is crucial since they help achieve an accurate seating of the denture, which directly impacts how efficiently the prosthetic performs during activities like chewing and speaking. When guide planes are accurately designated, they can facilitate the movement of the denture in a manner that aligns with the natural contours of the mouth, thereby preventing issues with dislodgement or discomfort while eating or talking. In contrast, while factors such as stability of the framework, prevention of lateral movement, and support to the teeth are significant considerations in the design and fitting of dentures, they are secondary to ensuring optimal functionality. An improperly functional denture can reduce a patient's quality of life by impacting their ability to eat, speak, and feel comfortable. Therefore, prioritizing functionality through the appropriate placement of guide planes is critical in dental prosthetics.

3. What is a hallmark genetic marker associated with Chronic Myelogenous Leukemia (CML)?

A. Philadelphia chromosome

B. BRCA1 mutation

C. TP53 mutation

D. JAK2 mutation

The Philadelphia chromosome is a specific genetic marker that is classically associated with Chronic Myelogenous Leukemia (CML). This abnormality occurs due to a translocation between chromosome 9 and chromosome 22, resulting in the fusion gene BCR-ABL. The presence of this fusion gene leads to continuous activation of signals promoting cell division and survival, which is a driving force in the development of CML. Identifying the Philadelphia chromosome is crucial in diagnosing CML as it confirms the disease's presence and influences treatment decisions. The understanding of this genetic marker has also paved the way for targeted therapies, such as tyrosine kinase inhibitors, which specifically inhibit the activity of the BCR-ABL protein, thus providing a more effective treatment option for patients with CML.

4. Which type of impression material is hydrophobic and sensitive to temperature?

A. Polysulfide

B. PVS

C. Polyether

D. Alginate

Polyvinyl siloxane (PVS) is indeed hydrophobic and sensitive to temperature. PVS is a type of elastomeric impression material known for its superior dimensional stability and detail reproduction, making it a popular choice in dental practices. Its hydrophobic nature impacts how it interacts with moisture present in the oral cavity, which can affect the accuracy of the impression if not managed properly. Temperature sensitivity refers to PVS's tendency to be influenced by temperature changes during the setting process, which can alter its viscosity and the resultant quality of the impression. When the material is stored or manipulated at higher temperatures, it may become more fluid, and at lower temperatures, it may set faster than desired. In contrast, polysulfide and polyether materials are generally more hydrophilic, allowing them to capture detail in the presence of moisture, while alginate has a different setting mechanism and can also absorb moisture, but is not characterized by the same degree of hydrophobicity or temperature sensitivity as PVS. Understanding these properties helps dental hygienists select the most appropriate impression materials for different clinical situations.

5. What are the recommended dimensions for cingulum rest depths?

A. 1 mm wide, 1 mm deep

B. 2 mm wide (F-L), 2.5-3 mm (M-D), 1 mm deep

C. 2 mm wide (F-L), 2.5-3 mm (M-D), 1.5 mm deep

D. 2 mm wide (F-L), 2.5-3 mm (M-D), 2 mm deep

The recommended dimensions for cingulum rest depths are considered important in ensuring adequate support and retention for removable partial dentures. The correct choice specifies a width of 2 mm in the facial-lingual direction and a mesio-distal width of 2.5 to 3 mm, which is appropriate for achieving proper stability and distribution of forces during function. The depth of 2 mm for the rest is optimal, as it allows for sufficient material thickness to prevent fracture and to provide the necessary resistance to displacement. This specification aligns with the principles of prosthodontics, aiming to provide an effective design that supports the overall biocompatibility and functionality of dental restorations. This depth also facilitates proper positioning of the rest within the preparation, ensuring that the occlusal load is effectively managed, ultimately supporting the longevity and effectiveness of the dental appliance.

6. What line should the inferior surface of the maxillary occlusal rim be parallel to?

A. Frankfort Horizontal Plane

B. Camper's Line (Ala-tragus Line)

C. Inter-occlusal Plane

D. Mandibular Plane

The inferior surface of the maxillary occlusal rim should be parallel to Camper's Line, also known as the Ala-tragus Line. This line is an important anatomical reference that helps establish the proper orientation of dental structures in relation to the facial features of a patient. Specifically, Camper's Line extends from the lowest point of the ala of the nose to the tip of the tragus of the ear. Aligning the occlusal rim to this line ensures that the maxillary denture or prosthesis is positioned correctly in relation to the patient's facial aesthetics and functional occlusion. Using Camper's Line as a reference is essential during the fitting of dentures, as it helps achieve a harmonious appearance and aids in proper phonetics and mastication. Ensuring that the occlusal plane is parallel to this line contributes to achieving a natural appearance in the dental restoration, enhancing both function and aesthetics. In contrast, while the other planes mentioned, like the Frankfort Horizontal Plane, Inter-occlusal Plane, and Mandibular Plane, have their specific applications in different contexts, they are not the primary reference for determining the orientation of the maxillary occlusal rim. Therefore, setting the inferior surface parallel to Camper's Line is crucial for effective

7. What is the depth of the rest seat in the center of the tooth?

A. 1 mm

B. 1.5 mm

C. 2 mm

D. 2.5 mm

The depth of the rest seat in the center of the tooth is typically 2 mm. This measurement ensures that the rest seat effectively supports the partial denture while allowing for adequate strength and stability. A depth of 2 mm provides enough space for proper material thickness, which contributes to the durability of the prosthetics. Rest seats are designed to allow the denture to sit on the tooth with minimal movement, and a depth that is too shallow could compromise the structural integrity of the appliance, leading to potential failure or discomfort for the patient. Conversely, a depth that is too deep could undermine the tooth's health and lead to unnecessary tooth reduction. Thus, a depth of 2 mm strikes the optimal balance for functionality and conservation of tooth structure.

8. In which type of melanoma does there typically not exist a radial growth phase?

A. Superficial spreading

B. Nodular

C. Lentigo maligna

D. Acral lentiginous

In the case of nodular melanoma, a characteristic feature is the absence of a radial growth phase. Unlike other forms of melanoma that begin with a horizontal spread of cancer cells within the epidermis before progressing to a deeper invasion, nodular melanoma typically arises as a vertical growth. This means that when nodular melanoma develops, it grows directly downward from the outset, leading to a more aggressive progression and a quicker invasion of the deeper tissues compared to other types. In contrast, superficial spreading melanoma often exhibits a radial growth phase where it spreads out on the skin's surface before penetrating deeper. Lentigo maligna also begins with a long radial growth phase, typically in sun-exposed areas, while acral lentiginous melanoma, found on non-hairy surfaces of the body, also demonstrates radial growth before entering the vertical phase. Thus, the lack of a radial phase in nodular melanoma is what differentiates it from these other types.

9. What characterizes a Kennedy Class I dentition?

A. Unilateral distal extension

B. Bilateral distal extension

C. Entirely tooth-borne

D. Edentulous area anterior to remaining teeth

Kennedy Class I is characterized by bilateral distal extension. This classification describes a type of partial edentulous situation where there are one or more missing teeth in the posterior regions of both sides of the dental arch, creating a situation where the remaining teeth are present only in the anterior or more anterior regions. The term "distal extension" refers to the fact that the edentulous areas extend posteriorly, beyond the last remaining natural teeth on either side of the arch. This classification has significant implications for treatment planning and prosthetic design, as it affects factors like denture stability and support. Effective supporting structures must be considered in the design of removable partial dentures for Class I situations to ensure proper distribution of forces and comfort for the patient. Understanding this classification helps dental professionals create suitable treatment plans that address the specific challenges of the patient's dental situation.

10. Which type of cyst is characterized as the second most common cyst in the oral cavity?

A. Odontogenic keratocyst

B. Dentigerous cyst

C. Nasal palatine duct cyst

D. Globulomaxillary cyst

The dentigerous cyst is recognized as the second most common type of cyst found in the oral cavity, primarily associated with the crowns of unerupted teeth, particularly the third molars and canines. This type of cyst forms when the dental follicle surrounding an unerupted tooth enlarges, leading to the accumulation of fluid or other materials within the cystic structure. Understanding the prevalence and characteristics of the dentigerous cyst is essential for dental practitioners, as its diagnosis often involves radiographic examination. On X-rays, it typically appears as a well-defined, unilocular radiolucency associated with the crown of an unerupted tooth. Proper identification and differentiation from other cystic lesions are crucial, as this can influence treatment options and potential complications associated with the cyst and the affected tooth. The other types of cysts listed, while important in their own right, do not rank as the second most common in the oral cavity. The odontogenic keratocyst is known for its aggressive behavior and high recurrence rate but does not share the same commonality as the dentigerous cyst. The nasal palatine duct cyst is relatively rare and typically occurs in the midline of the anterior maxilla. The globulomaxillary cyst