2017 National Prosthodontic Resident Exam

1. The primary stress bearing area of the edentulous mandible is:
   a. buccal shelf
   b. alveolar ridge
   c. retromolar pads
   d. mylohyoid ridge

**CRDP Answer:** a


2. All of the following are critical considerations during maxillary resection procedures that affect the subsequent restoration of the defect except one. Which one is the exception?
   a. intraoral resection
   b. remove as much of the premaxilla as possible
   c. remove inferior turbinate
   d. split thickness graft on denuded bone and soft tissue

**MF Answer:** b


3. The most common fracture sites for patients with osteoporosis are:
   a. hip, radius and vertebra
   b. humerus, clavicle and hip
   c. wrist, radius and vertebra
   d. mandible, hip and clavicle

**Other Answer:** a

4. Untreated obstructive sleep apnea can result in:

   a. systemic hypotension
   b. angular cheilitis
   c. tardive dyskinesia
   d. stroke

   Other Answer: d


5. Tissue entrapment at the implant/abutment interface has been shown to have a greater adverse effect with:

   a. external connection implants and thin amounts of tissue
   b. internal connection implants and thin amounts of tissue
   c. external connection implants and thick amounts of tissue
   d. internal connection implants and thick amounts of tissue

   Implants Answer: c


6. Tooth contacts during unguided border tracings of mandibular movements have been shown to:

   a. deflect movement away from border movements
   b. have no effect on border movement recording
   c. increase immediate mandibular lateral transtrusion
   d. increase Fischer’s angle

   Occlusion Answer: a

7. In regards to commercially pure or unalloyed titanium, all of the following are true except one. Which one is the exception?

a. Grade 1 has the least amount of impurities
b. hardness and yield strength increase with increasing impurities
c. increasing oxygen content increases fatigue strength
d. there are 5 grades of unalloyed titanium

Implants Answer: d

8. Anterior-posterior spread is defined as:

a. the distance along the residual ridge crest from the center of the most anterior implant to the center of the most posterior implant
b. the distance between horizontal lines drawn through the center of the most anterior implants and the distal of the most posterior implants
c. the radius of the arc formed by the implant centers
d. the average height difference between the anterior and posterior implant abutments

Implant surgery Answer: b

9. The most effective method to assess the fit of an implant fixed-detachable prosthesis framework intraorally is by using:

a. radiographs
b. the single screw test
c. disclosing media or other fit checking materials
d. alternate finger pressure
e. a combination of the above methods

Implants Answer: e
10. The 3/2 rule is a guideline for placement of a dental implant using soft and hard tissue landmarks. All of the following are components of the 3/2 rule except one. Which one is the exception?

a. depth of the implant placement is suggested to be 3mm apical to the planned gingival zenith
b. implant/abutment interface should reside 2mm palatal to the gingival zenith
c. suggests when bone grafting or soft tissue augmentation should be performed
d. suggests when the crown/implant ratio is exceeded

**Implant surgery Answer: d**

11. When performing a facial analysis, an increase in the middle third may indicate:

a. vertical maxillary excess
b. altered passive eruption
c. altered active eruption
d. hypermobile lip

**Esthetics Answer: a**

12. Dr. Milus House is credited with the design of which one of the following types of articulators?

a. twin axis hinge
b. fully adjustable
c. grinder
d. molded fossa

**Occlusion Answer: c**
PMID: 25754238.
13. Which of the following is true regarding the use of antibiotics at the time of implant placement?

   a. decrease the healing of the bone
   b. prophylactic antibiotics given before implant placement can reduce dental implant failure
   c. post-operative antibiotics are beneficial for reducing dental implant failure
   d. increase infection or adverse events

**Pharm Answer:** b

**Reference:** Cochrane Database Syst Rev. 2013 Jul 31;7:CD004152.
Interventions for replacing missing teeth: antibiotics at dental implant placement to prevent complications. Esposito M, Grusovin MG, Worthington HV.

14. What is the latest stage you can incorporate parts for platform switching and still maintain crestal bone?

   a. final abutment placement
   b. temporary coping during soft tissue conditioning
   c. healing abutment during second stage surgery
   d. cover screw at time of implant placement

**Implants Answer:** c

Platform switching: a new concept in implant dentistry for controlling postrestorative crestal bone levels. Lazzara RJ, Porter SS.

15. All of the following are important for performing a ridge expansion osteotomy technique except one. Which one is the exception?

   a. saline moistened osteotomes
   b. time for expansion of the bone
   c. undercuts in the maxilla prior to expansion
   d. prevention of torsional forces

**Implant surgery Answer:** c

16. During the uncovering procedure, all of the following are true regarding the soft tissue incision except one. Which one is the exception?

   a. designed to place keratinized tissue on each side of the permucosal abutment
   b. a tissue punch may be used if there is 1.5 mm or more of attached keratinized tissue facial to the implant
   c. incision is usually made through the center of the healing abutment or screw
   d. incision continues at least 5 to 10 mm distal to the last implant placed

   **Implant surgery Answer:** c

17. All of the following are physical properties of commercially pure titanium except one. Which one is the exception?

   a. possesses hexagonal close pack lattice structure at room temperature
   b. low density
   c. slow to repassivate
   d. forms several oxides, including TiO, TiO_2_, and Ti_2_O_3_

   **Materials Answer:** c

18. On average, the periosteum is how many mm thick?

   a. 0.37
   b. 0.75
   c. 1.35
   d. 2.75

   **Perio Answer:** a
19. All of the following statements regarding immediately loading four mandibular implants supporting a fixed complete arch prosthesis are true except one. Which one is the exception?

a. rescue implants are generally required  
b. survival rates are comparable to two-stage protocols  
c. reinforced acrylic is the most desirable provisional prosthesis  
d. use of extraction sites should be avoided when using four implants

Implants Answer: a  

20. Which of the following techniques for harvesting autogenous bone grafts demonstrates the lowest osteogenic potential?

a. grinding of cortico-cancellous bone blocks with a bone mill  
b. harvesting with piezo-surgery  
c. using a bone scraper  
d. no technique has demonstrated superior osteogenic potential

Implant surgery Answer: b  

21. According to Schalhorn, what percentage of patients possessed a kinematic center that was within a 5 mm radius from the arbitrary center?

a. 95%  
b. 97%  
c. 85%  
d. 87%  
e. 75%

Other Answer: a  
22. Which of the following is true regarding pressure generated during complete denture impressions?

   a. alginate produces the lowest pressure
   b. light body polysulfide produces the highest pressure
   c. medium body polyvinylsiloxane produces the lowest pressure
   d. a spacer and holes in the tray has no clinically significant effect

CRDP Answer: d

23. All of the following influence the rate of implant loss except one. Which one is the exception?

   a. implant location
   b. type of restoration
   c. number of implants
   d. type of connection

Implants Answer: d

24. All of the following patient satisfaction outcomes were found in a randomized cross-over study comparing anatomic, lingualized, and zero-degree tooth forms for complete dentures except one. Which one is the exception?

   a. lingualized posterior occlusal forms were superior in terms of reducing biting force compared to zero-degree posterior tooth forms
   b. anatomic posterior occlusal forms were better in terms of masticatory function compared to zero-degree posterior tooth forms
   c. no significant differences were found between lingualized posterior tooth forms and anatomic posterior tooth forms
   d. lingualized anterior incisal forms were superior to zero-degree and anatomic incisal forms

Occlusion Answer: d
25. When considering the biological complications of all-ceramic and metal-ceramic crowns, all statements are true except:

   a. loss of abutment vitality is a biological complication that occurs more frequently with metal-ceramic crowns than all-ceramic crowns
   b. abutment tooth fracture occurred more frequently for all ceramic crowns than metal-ceramic crowns.
   c. when comparing all-ceramics systems, zirconia based crowns had significantly less secondary caries
   d. when comparing all-ceramics systems, glass-infiltrated ceramic crowns had higher caries rates

   **FDP Answer:** b  

26. When comparing bilateral balanced denture occlusion and neutrocentric occlusion which of the following is true?

   a. masticatory performance is not related to number of chewing strokes
   b. masticatory performance for the bilateral balanced denture is higher
   c. masticatory performance is equal between both occlusal schemes
   d. masticatory performance for neutrocentric occlusion is higher

   **CRDP Answer:** c  

27. The maximum concentration of compressive stress around osseointegrated implants is observed around which area of the implant?

   a. coronal 1/3rd
   b. middle 1/3rd
   c. apical 1/3rd
   d. base

   **Implants Answer:** a  
28. Which of the following types of forces is not associated with the bone-implant interface?

a. tensile  
b. torsion  
c. shear  
d. compressive

Implants Answer: b


29. At what insertion torque does the incidence of crestal bone loss become statistically significant?

a. 50 Ncm  
b. 100 Ncm  
c. 175 Ncm  
d. insertion torque is not associated with crestal bone loss

Implant surgery Answer: d


30. Which of the following statements regarding vital tooth bleaching is correct?

a. 10% carbamide peroxide is the active agent most often used for in-office bleaching.  
b. carbamide peroxide is a more stable compound than hydrogen peroxide.  
c. 35% hydrogen peroxide is recommended for at-home bleaching.  
d. 10% hydrogen peroxide solution has the same bleaching potential as a 3.4% carbamide peroxide solution.

Other Answer: b

31. Which of the following elastomeric impression materials give off alcohol or water as a polymerization reaction byproduct?

a. polysulfide and condensation silicone  
b. polyether and condensation silicone  
c. polysulfide and addition silicone  
d. polyether and addition silicone

**Materials Answer:** a  

32. Which of the following components has the most impact on vertical movement away from a distal extension area of a Kennedy Class I RDP?

a. distal guideplanes  
b. indirect retainers  
c. mesial rests  
d. rigid major connector

**PRDP Answer:** a  

33. Which cross-sectional design for a cantilevered pontic connector on a cast implant supported restoration was found to have better fatigue resistance?

a. J-shape  
b. U-shape  
c. L-shape  
d. elliptical-shape

**Implants Answer:** c  
34. The shape and amount of distobuccal extension of a complete mandibular edentulous impression is determined during border molding by which of the following anatomic structures?

a. lateral pyterygoid  
b. buccinator  
c. superior constrictor  
d. masseter  
e. ramus of mandible  

CRDP Answer: d  

35. All of the following information should go into the dentist’s record following delivery of a metal-containing prosthesis except one. Which one is the exception?

a. American Dental Association classification of alloys for fixed prosthodontics  
b. manufacturer  
c. composition  
d. physical properties  

Materials Answer: d  

36. Which of the following loading protocols for single implants placed to support complete overdentures exhibits the highest rate of implant failure?

a. the immediate load protocol  
b. the early load protocol  
c. the conventional load protocol  
d. there is no significant difference in the rate of implant failure between these techniques  

Implants Answer: a  
37. All of the following statements regarding the use of a post to retain a core for restoration of an endodontically treated tooth are true except one. Which one is the exception?

a. risk of overall failure is greater if a post is not used
b. risk of catastrophic failure is greater if a post is not used
c. no greater risk of catastrophic failure if a post is not used when 3 or 4 coronal walls remain
d. when no post is used, there is a greater risk of non-catastrophic failure regardless of how many coronal walls remain

**FDP Answer:** d  

38. According to the Misch classification of implant occlusal loading protocols, which of the following most accurately describes the timing for early implant loading?

a. 1-4 days following implant placement  
b. 1-2 weeks following implant placement  
c. 2-12 weeks following implant placement  
d. 3-4 months following implant placement

**Implants Answer:** c  

39. Adjacent tooth movement and space closure of a posterior bounded edentulous space usually becomes gradual and minor at what time frame following extraction?

a. 1 year  
b. 2 years  
c. 3 years  
d. 4 years

**Ortho Answer:** b  
40. All of following malocclusions may result in distal tilting of a premolar mesial to a posterior edentulous space except one. Which one is the exception?

a. Class II malocclusion where contact exists between maxillary and mandibular canines  
b. Class I malocclusion with an anterior open bite  
c. Class III malocclusion with reverse incisal overlap  
d. Class I malocclusion with a posterior reverse articulation

**Ortho Answer:** a


41. Approximately how much vertical tooth displacement would be expected with modest occlusal loads?

a. 10 µm  
b. 50 µm  
c. 100 µm  
d. none of the above

**Anatomy Answer:** b


42. Vertical measurements made on a panoramic radiograph can be expected to exhibit which one of the following characteristics?

a. measurements are accurate to within 50 µm, regardless of unit used  
b. measurements are magnified by a consistent percentage for each panoramic unit  
c. measurements vary when repeated using the same panoramic unit  
d. measurements are repeatable between panoramic units by different manufacturers

**Radiology Answer:** b

43. Which of the following statements describes the simultaneous actions of the superior and inferior heads of the lateral pterygoid muscles in protrusion of the mandible?

a. superior head contracts while inferior head relaxes
b. both superior and inferior heads contract
c. superior head relaxes while inferior head contracts
d. both superior and inferior heads relax

**Anatomy Answer:** c


44. It is generally accepted that the biting force of subjects with natural dentitions is ________ times greater compared to that of complete denture wearers.

a. 2
b. 3
c. 4.5
d. 10

**CRDP Answer:** c


45. Which posterior metal-ceramic crown margin location is associated with the most sulcular bleeding and plaque accumulation?

a. subgingival/facial
b. subgingival/lingual
c. equigingival/facial
d. equigingival/lingual

**Perio Answer:** b

46. The minor connector for a mandibular distal extension resin retention base should extend posteriorly about __________.

   a. two-thirds the length of the edentulous ridge  
   b. half the length of the edentulous ridge  
   c. one-third the length of the edentulous ridge  
   d. as long as possible

**PRDP Answer:** a  

47. Multivariate analysis is most appropriately used to analyze which one of the following types of data?

   a. ordinal data from multiple independent variables  
   b. nominal data from independent and multiple dependent variables  
   c. interval data from one independent and one dependent variable  
   d. ratio data from multiple dependent variables

**EBD Answer:** d  

48. Each of the following is recommended for dental management of patients with chronic obstructive pulmonary disease (COPD) except one. Which one is not recommended?

   a. use of local anesthetic as usual  
   b. treat in upright chair position  
   c. use of rubber dam, particularly in severe disease  
   d. nitrous oxide-oxygen inhalation sedation with mild COPD

**MEDICINE Answer:** c  
49. All of the following are characteristics of histrionic personality disorder except one. Which one is the exception?
   a. grandiose sense of self-importance
   b. uncomfortable when not the center of attention
   c. use of physical appearance to draw attention to self
   d. easily influenced by others

MEDICINE Answer: a

50. Rapid and acute loss of consciousness by a known diabetic patient in the course of routine dental treatment is most likely a manifestation of which of the following?
   a. hyperglycemia
   b. ketosis
   c. acidosis
   d. hypoglycemia

Other Answer: d

51. The incidence of an open proximal contact developing following fixed implant restoration adjacent to a natural tooth is:
   a. 0.5-1.5 %
   b. 2-5 %
   c. 10-15 %
   d. 35-65 %

Implants Answer: d
52. What percentage of patients can be expected to demonstrate an anterior loop of the inferior alveolar nerve beyond the confines of the mental foramen?

a. 1-3 %

b. 5-10 %

c. 15-20 %

d. more than 50 %

**Implant Surg Answer:** d


53. Which one of the following outcomes represents the most likely sequela of soft tissue entrapment when an abutment is definitively torqued to an implant platform?

a. tissue necrosis and dissolution in 48 hrs and no loss of mean reverse torque value.

b. tissue necrosis with dissolution in 48 hrs and significant loss of mean reverse torque value.

c. tissue necrosis without dissolution in 48 hrs and no loss of mean reverse torque value.

d. tissue necrosis without dissolution in 48 hrs and significant loss of mean reverse torque value.

**Implants Answer:** d


54. Of the following statistical tests, which one is most appropriately used to test the difference between two independent groups of ordinal data?

a. Student’s t-test

b. Mann-Whitney test

c. Analysis of variance (ANOVA)

d. Tukey test

**EBD Answer:** b.

55. All of the following outcomes may be seen when an occlusal prematurity is introduced with a new restoration except one. Which one is the exception?

a. masticatory muscle pain on the contralateral side
b. TMJ clicking
c. TMJ pain
d. open lock of the ipsilateral TMJ

**TMD Answer:** d  

56. “Immediate mandibular lateral translation” or “Immediate side shift” are terms best used to describe which one of the following?

a. the immediate laterally directed movement of an orbiting condyle in a working border excursion  
b. the immediate medially directed movement of a rotating condyle in a working border excursion  
c. the lateral shift experienced in movement from centric relation to maximum intercuspation  
d. the translatory portion of lateral movement in which the nonworking side condyle moves essentially straight and medially as it leaves the centric relation position

**OCCLUSION Answer:** d  

57. A fixed dental prosthesis (FDP) with 3 pontics (combined M-D width 21 mm) would be expected to be displaced vertically to what extent under load compared to a FDP with a single pontic of the same vertical thickness (M-D width 7 mm)?

a. 3 times more  
b. 9 times more  
c. 27 times more  
d. 81 times more

**FDP Answer:** c  
58. Diameter of Monson’s sphere is:

a. 4 cm  
b. 4 inches  
c. 16 mm  
d. 8 inches  

**Occlusion Answer:** d  
**Reference:** Monson GS. Occlusion as Applied to Crown and Bridge-Work. JNDA 1920;7(5):399-413.

59. Which of the following bone types has the poorest prognosis for long term implant placement?

a. Type 1  
b. Type 2  
c. Type 3  
d. Type 4  

**Implant surgery Answer:** d  

60. One Sievert (Sv) is equal to one:

a. Rem  
b. Joule  
c. Roentgen  
d. Gray  

**Radiology Answer:** d  

61. Which of the following is not a concept described by Devan, for developing a neutrocentric occlusion scheme?

a. increasing the width of the posterior teeth by 40% to better distribute the load  
b. positioning the posterior teeth in a central position in reference to the foundation as the tongue function will allow  
c. a reduction in the number of posterior teeth to six teeth per arch  
d. neutralizing the compensating curve  

**Occlusion Answer:** a  
62. What is the minimum amount of bone that must be present between platform-switching implants to preserve inter-implant bone height?

   a. 4 mm  
   b. 3 mm  
   c. 2 mm  
   d. 1 mm

**Implant surgery Answer:** c  

**Reference:**

63. Digital impression technique accuracy is dependent on all of the following factors except one. Which one is the exception?

   a. substance shape  
   b. point cloud numbers  
   c. positive/negative structures  
   d. available light

**Other Answer:** d  


64. All of the following are characteristics of intraoral optical scanners that utilize white light except one. Which one is the exception?

   a. can be used in virtually any lighting condition  
   b. provides good accuracy  
   c. slow when measuring objects with many intricate details  
   d. eye safe

**Other Answer:** a  

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65. According to the National Council on Radiation Protection and Measurements:

a. the effective dose from an average panoramic radiograph equals two days of background radiation
b. a panoramic exposure has an effective dose of ~40 µSv
c. the average person in the U.S. receives ~30 µSv of effective dose of ionizing radiation per day
d. a panoramic exposure has a dose of ~40 µGy

Radiology Answer: a

66. All of the following are examples of additive manufacturing technologies to fabricate CAD/CAM restorations except one. Which one is the exception?

a. selective laser sintering
b. 5-axis milling
c. selective heat sintering
d. electron beam melting

Other Answer: b

67. An advantage of subtractive manufacturing technology in CAD/CAM dentistry is:

a. any material can be used
b. can be used to produce structures within structures
c. utilizes machines with unlimited axis of rotation
d. less material waste is created during manufacture

Other Answer: a
68. All of the following statements regarding .stl files are true except one. Which one is the exception?

a. open source
b. compatible with most CAD software available on the market
c. allow for the incorporation of information within the file regarding the mechanical properties of materials
d. use triangular surface facets to approximate the shape scanned

**Other Answer:** c


69. All of the following are characteristics of an ideal complete coverage crown preparation except one. Which one is the exception?

a. minimum of 4 mm occlusocervical dimension for molars
b. total occlusal convergence angle between 10 to 20 degrees
c. auxiliary features are placed on buccal or lingual surfaces to increase resistance form
d. extension of subgingival margins to the epithelial attachment should be avoided
e. shoulder finish lines for all-ceramic crowns that are not etched and bonded to the preparation

**FDP Answer:** c


70. Which one of the following statements regarding pretreatment of retraction cords with epinephrine solutions is true?

a. systolic pressure remains unaltered with 0.1% epinephrine solution
b. systolic pressure remains unaltered with 0.001% epinephrine solution
c. diastolic pressure remains unaltered with 0.1% epinephrine solution
d. crevicular fluid volume remains unaltered with 0.001% solution

**Pharm Answer:** c

71. Active posts compared to passive posts are:

   a. more retentive, more stress in the root
   b. more retentive, less stress in the root
   c. less retentive, more stress in the root
   d. less retentive, less stress in the root

**Endo Answer:** a

72. C factor refers to:

   a. coefficient of thermal expansion
   b. coefficient of setting expansion
   c. ratio of bonded to non-bonded areas of composite restorations
   d. shrinkage of ceramics upon cooling

**Materials Answer:** c

73. In TNM staging of head and neck cancer, M refers to:

   a. involvement of bone marrow
   b. presence or absence of distant metastasis
   c. multi drug therapy
   d. minimally invasive cancer

**MF Answer:** b

74. All of the following are true, except one. Which one is the exception?

   a. excessive interfacial micromotion compromises implant osseointegration
   b. primary stability appears to be an important determining factor for osseointegration
   c. very few studies are available to support the concept of peri-implant bone overload
   d. insertion torque of 20 N/cm is necessary for immediate loading

**Implants Answer:** d

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75. According to the American Academy of Sleep Medicine, which of the following is true regarding sleep bruxism?

a. the pattern tends to be arrhythmic, sporadic and non-repetitive
b. the disorder is classified as a sleep-related movement disorder
c. the disorder mainly involves lateral and medial pterygoid muscles during sleep arousal
d. sleep bruxism has been proven to be linked with apnea

Other Answer: b

76. All of the following are possible side effects of long-term use of an oral appliance to manage sleep apnea except one. Which one is the exception?

a. decrease in overjet and overbite
b. excessive salivation
c. increased FMA
d. overeruption of mandibular teeth

Other Answer: b

77. Which of the following is true regarding septa in the maxillary sinus?

a. most commonly found in the posterior region posterior to maxillary second molars
b. formed due to early loss of dentition in that region
c. prevalence ranges from 16–58%
d. are not a complicating factor of the osteotome technique

Anatomy Answer: c
78. All of the following definitions are correct except one. Which one is the exception?

a. sensitivity: the proportion of time a diagnostic test is positive in patients who have the disease or condition
b. specificity: the proportion of time that a diagnostic test is positive in patients that do not have the disease or condition
c. prevalence: the proportion of people who have a given disease or condition at a specified point in time
d. incidence: the proportion of people who develop a given disease or condition within a specified period

Other Answer: b  

79. Which material has a refractive index similar to feldspathic porcelain and is used to strengthen the ceramic?

a. China clay  
b. leucite  
c. lithium meta-silicate  
d. alumina

Materials Answer: b  

80. Which of the following Applegate’s rules for the Kennedy Classification system of the partially edentulous arch is not correct?

a. classification should follow rather than precede extractions  
b. the most posterior edentulous area(s) always determine the classification  
c. the extent of the modification is not considered, only the number of additional edentulous areas  
d. there can be modification areas in Class IV arches

PRDP Answer: d  

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81. All of the following statements regarding dental caries are correct except one. Which one is the exception?

   a. mutans streptococci and lactobacilli are the primary causative agents of dental caries
   b. occlusal surfaces of molars have the highest caries risk
   c. critical pH of enamel has been estimated to be 5 - 6
   d. theoretically caries lesions can be arrested at any stage of the caries process
   e. fluoride is more effective in inhibiting lesion progression than inhibiting the initiation of caries

Oral Path Answer: e

82. Which of the following statements regarding Obstructive Sleep Apnea (OSA) is false?

   a. patients with OSA are poor candidates for in-office sedation using oral or parental benzodiazepines
   b. central sleep apneas may be effectively treated with oral appliance therapy
   c. men are at greater risk for OSA if they have a neck circumference of 17 inches or more
   d. total number of apneas and hypopneas per hour of sleep is referred to as the Apnea-Hypopnea Index

Other Answer: b
References:

83. All of the following prosthetic considerations to increase the success of immediate implant loading are desirable except one. Which one is the exception?

   a. splint multiple implants to increase cross-arch stability and decrease micromovement
   b. stabilize single implant interim restorations with good interproximal contacts
   c. screw-retained interim restorations are preferred over cement-retained restorations
   d. interim prosthesis should always provide centric contacts and good lateral guidance

Implants Answer: d

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84. All of the following statements are true except one. Which one is the exception?

a. phentolamine mesylate (OraVerse) can reduce the duration of dental anesthetics
b. cocaine potentiates the effects of vasoconstrictors in local anesthetics
c. articaine and bupivacaine are recommended for children younger than 4 years old
d. vasoconstrictors are used to prolong the duration of anesthetic effect

Pharm Answer: c

85. Which one of the following statements is true regarding translucent zirconia?

a. alumina is added to increase translucency
b. an increase is cubic phase is associated with greater translucency
c. a large grain size is associated with greater translucency
d. a small amount of porosity will not affect translucency

Materials Answer: b

86. The wound healing process that leads to osseointegration can be divided into 4 phases. Which of the following is not one of these phases?

a. hemostasis phase
b. inflammatory phase
c. proliferative phase
d. integration phase

Wound healing Answer: d
87. Which of the following compounds is commonly used as an inhibitor in methyl methacrylate liquid?

a. camphoroquinone  
b. benzoyl peroxide  
c. oleic acid  
d. hydroquinone

Materials Answer: d  

88. Which of the following is a biologic complication of a one-piece all-zirconia abutment on an internal connection titanium dental implant?

a. abutment screw fracture  
b. titanium tattoo  
c. altered gingival esthetics  
d. abutment fracture

Other Answer: b  

89. All of the following are reasons for early implant failure except:

a. periimplant infection  
b. surgical site overheating  
c. use of short implants  
d. surgical trauma

Wound healing Answer: c  
90. All of the following principles of radiation therapy are true except one. Which one is the exception?

- a. nucleus is 100 to 1,000 more sensitive to radiation than the cytoplasm
- b. effect on individual cells varies according to the position the cell occupies in the cell cycle
- c. conventional fractionation consists of a total dose of 55 to 62 Gy
- d. the gray is the energy absorption of 1 J/kg of tissue

Radiology Answer: c


91. During anodization of titanium, the surface layer is modified by which of the following methods:

- a. deposition of titanium dioxide molecules
- b. removal of titanium dioxide molecules
- c. altering the existing oxide layer thickness
- d. addition of metal oxide colorants in acidic bath

Materials Answer: c


92. All of the following elements are found in both commercially pure titanium and titanium alloy except one. Which one is the exception?

- a. vanadium
- b. iron
- c. nitrogen
- d. carbon
- e. oxygen

Materials Answer: a

93. Difficulty in swallowing is known as:
   a. dysphagia
   b. dysphasis
   c. dyspnea
   d. dyspepsia

**MF Answer:** a
**Reference:** The Glossary of Prosthodontic Terms, 8th Ed. JPD 2005, 94(1).

94. The most common complication associated with post and cores is:
   a. root fracture
   b. post loosening
   c. caries
   d. root perforation

**FDP Answer:** b

95. All of the following clinical situations are absolute contraindications for all-ceramic resin-bonded FDPs. Which situation is the exception?
   a. multiple pontics
   b. enamel deficiency or other types of enamel defects
   c. parafunctional habits and bruxism
   d. caries or extensive restorations on abutment teeth

**FDP Answer:** d
96. All of the following are true regarding implant supported mandibular overdentures except:

a. they have excellent prosthetic and implant survival rates
b. there is no difference in average patient satisfaction between 2 and 4 implant overdentures
c. they require significantly less aftercare treatment than the implant fixed complete denture
d. more than two implants should be considered when the mandibular ridge morphology is poor

**Implants Answer:** c


97. All of the following are considered signs of implant failure except:

a. pain on function
b. mobility
c. radiographic bone loss greater than 50% of the implant length
d. uncontrolled bleeding on probing

**Implants Answer:** d


98. The trigeminal nerve originates from the:

a. first branchial arch
b. second branchial arch
c. third branchial arch
d. fourth branchial arch

**Anatomy Answer:** a

99. Following maxillary tuberosity reduction, the recommended healing time prior to making initial impressions for complete dentures is:

a. 4 weeks  
b. 8 weeks  
c. 12 weeks  
d. 18 weeks

**Wound healing Answer:** a  

100. Following excision of excess hypermobile tissue, when is it appropriate to make initial impressions for complete dentures?

a. 1 month  
b. 3 months  
c. 6 months  
d. 9 months

**Wound healing Answer:** a  

101. According to the hierarchical levels of evidence, case control studies represent what level of evidence:

a. Level 1  
b. Level 2  
c. Level 3  
d. Level 4  
e. Level 5

**EBD Answer:** c  
102. According to the hierarchical levels of evidence, cohort studies represent what level of evidence:

a. Level 1
b. Level 2
c. Level 3
d. Level 4
e. Level 5

**EBD Answer:** b  

103. The basic stages of wound healing include all of the following except:

a. inflammatory  
b. fibroplastic  
c. resolution  
d. remodeling

**Wound healing Answer:** c  

104. The majority of sleep bruxism events occur during which stages of sleep:

a. 1 and 2  
b. 2 and 3  
c. 3 and 4  
d. 4 and 5

**Other Answer:** a  
105. All of the following are implicated in the etiology of sleep-related bruxism except one. Which one is the exception?

a. gastroesophageal reflux  
b. disturbances in central dopaminergic system  
c. smoking  
d. occlusal prematurities

Other Answer: d


106. What class of local anesthetics undergo enzymatic degradation in the liver?

a. ester  
b. topical anesthetic  
c. amide  
d. benzocaine

Pharm Answer: c


107. Adjacent implants placed at least 3 mm apart generally exhibit ________ interproximal crestal bone loss compared with those placed less than 3 mm apart.

a. more  
b. less  
c. the same

Implants Answer: b

108. When considering worn teeth, which teeth would likely have the highest proportion of width to length?

a. centrals  
b. laterals  
c. canines  
d. first premolars

**FDP Answer:** a  

109. At the end of the fibroplastic stage of healing, the wound has approximately % of its original strength:

a. 10-20  
b. 30-40  
c. 50-60  
d. 70-80

**Wound healing Answer:** d  

110. The mechanism of action of fluconazole is:

a. a metabolic inhibitor  
b. bacterial protein synthesis inhibitor  
c. interfering with fungal cytochrome P450  
d. bacterial cell wall inhibitor

**Pharm Answer:** c  
111. Which type of study has the weakest level of evidence?

   a. cohort study
   b. randomized clinical trial
   c. case report/case series
   d. case control study

**EBD Answer:** c  

112. Complete failure of zirconia-based fixed dental prostheses mainly result from:

   a. poor material finishing
   b. use of veneering feldspathic porcelain
   c. under-reduced tooth structure and insufficient connector size
   d. contamination of the zirconia material

**Materials Answer:** c  

113. What percentage of the population has enough room for a 4 mm mandibular lingual bar?

   a. 21%
   b. 53%
   c. 72%
   d. 85%

**PRDP Answer:** d  
114. All of the following statements are true regarding the use of tilted posterior implants to support a mandibular fixed hybrid prosthesis except one. Which one is the exception?

a. may decrease bending moments on prostheses in rectangular-shaped mandibles
b. negative effect on load distribution
c. avoid vital anatomical structure
d. allows use of longer implants

**Implants Answer:** b  

115. All of the following properties regarding elastomeric impression materials are true except one. Which one is the exception?

a. low viscosity materials generally possess a higher tear strength  
b. polyether generally has a higher rigidity than polyvinyl siloxane  
c. polysulfide has low rigidity, yield strength and strain tolerance, but high tear strength  
d. low and medium viscosity materials should reproduce V-shaped grooves of 20 microns

**Materials Answer:** a  

116. All of the following are prosthesis related technical or biological complications of a complete-arch fixed implant rehabilitation except one. Which one is the exception?

a. hypertrophy/hyperplasia of the soft tissue  
b. loss of the access hole filling material  
c. peri-implant crestal bone loss exceeding 2mm  
d. abutment screw fracture

**Implants Answer:** c  
117. All of the following statements regarding ring clasps are correct except one. Which one is the exception?

a. reciprocation and stabilization may be provided without a supporting strut  
b. the retentive arm extends from the supporting strut to the tip of the clasp  
c. the supporting strut should be placed on the non-retentive side of the abutment  
d. the portion of the clasp between the occlusal rest and supporting strut provides reciprocation

PRDP Answer: a  

118. Compared with patients who did not wear a RDP, vertical and horizontal mandibular alveolar bone resorption was found to be _______ in Kennedy Class II RDP wearing patients.

a. higher  
b. lower  
c. the same

PRDP Answer: a  

119. Changing the third point of reference between facebow transfers on a non-arcon articulator affects the accuracy of the:

a. intercondylar distance  
b. Bennett angle  
c. condylar inclination  
d. anterior guidance  
e. immediate lateral mandibular translation

Other Answer: c  
120. All of the following are true regarding failure of endodontically treated teeth except one, which is the exception?

a. Endodontic failures occur less than 10% of the time
b. Prostodontic failures often occur < 2 years after endodontic therapy
c. Surgical retreatment is an alternative after unsuccessful non-surgical therapy
d. Teeth without crowns are 6 times more likely to be extracted after RCT than those with crowns

Other Answer: b
Reference: Strategic considerations in treatment planning: Deciding when to treat, extract, or replace a questionable tooth. NU Zitzmann et al, JPD 2010:104:80-91.

121. All of the following patient presentations increase the odds for implant complication or failure except one; which is the exception?

a. History of aggressive periodontitis
b. Heavy smoking (more than 10 pack-years)
c. Uncontrolled diabetes
d. Status post chemotherapy
e. High caries index with associated xerostomia

Implants Answer: e
Reference: Strategic considerations in treatment planning: Deciding when to treat, extract, or replace a questionable tooth. NU Zitzmann et al, JPD 2010:104:80-91.

122. All of the following are true regarding treatment of periodontally and structurally sound teeth that exhibits pulpal and/or periapical pathosis except one, which one is the exception?

a. Initial endodontic treatment has a high long-term survival rate
b. Extraction and replacement with an implant-supported restoration has a high long-term survival rate
c. Extraction and replacement with an FDP has a high long-term survival rate
d. Endodontic, implant, or fixed prosthodontic treatments result in a high patient self-image

Other Answer: c
123. When inflammatory disease is found around cement retained restorations on implants
   a. this is largely due to periodontal pathogens
   b. routine use of intrasulcular antibiotics is advised
   c. systemic antibiotics are advised
   d. periodontal therapy to remove reservoirs of pathogens are required
   e. cement remnants are commonly found and removal may resolve disease

   **Oral Path Answer:** e


124. How does depth of margin placement within a gingival sulcus affect the amount of undetected residual cement on implant restorations?
   a. margin depth does not affect undetected residual cement
   b. cement type or abutment materials do not play a role
   c. cementation technique can prevent undetected cement
   d. deeper margins result in more undetected cement

   **Other Answer:** d


125. How do feldspathic porcelain veneers bonded to dentin compare to those bonded to enamel?
   a. the survival is the same at 10 years
   b. veneers bonded to dentin are less successful at 5 and 10 years
   c. at 5 years they are less successful, but at 10 years the success rates are the same
   d. at 5 years they are greater than enamel bonded veneers but at 10 years they are equal

   **FDP Answer:** b

126. According to a classic article by Vig and Brundo, the maxillary incisal display at rest is:

a. constant with age  
b. affected by weight gain and loss  
c. increased with age  
d. decreased with age  
e. decreased then stabilized in the fourth decade of life

**Esthetics Answer:** d  

127. Patients taking calcium channel blockers have a _______% increase in risk of gingival hyperplasia:

a. 10  
b. 20  
c. 30  
d. 40  
e. 50

**Oral Path Answer:** e  

128. Which of the following is true regarding modern electrosurgery units and their relationship with implantable cardiac pacemakers and cardiac defibrillators?

a. generally safe and shielded against electromagnetic interference  
b. only problematic if the implantable unit uses bipolar leads  
c. not safe in any circumstance  
d. only problematic if less than 10 cm from operative site

**Other Answer:** a  
129. The current best evidence suggests the effect of hyperbaric oxygen therapy on dental implant placement in previously irradiated jaws:

a. increased implant survival as long as radiation dose was less than 50 Gy
b. had no effect on implant survival
c. increased survival at any radiation dosage
d. reduced implant survival

**MF Answer:** b


130. In comparison to monolithic lithium disilicate, layered lithium disilicate restorations are found to fracture at:

a. twice the rate
b. three times the rate
c. same rate
d. half the rate

**Materials Answer:** a


131. Regarding success and survival rates for implants adjacent to endodontically treated teeth, all of the following are true except one. Which one is the exception?

a. implant survival rate is unaffected when adjacent to endodontically involved teeth
b. implant failure related to endodontitis of adjacent teeth is low
c. extraction of teeth with endodontic involvement is warranted
d. implant success rate is lower when adjacent to endodontically involved teeth

**Other Answer:** c

132. How does high serum cholesterol affect implant survival and bone grafting procedures?
   a. increases implant failure and bone graft procedures
   b. no effect on either graft or implant survival
   c. increases graft failure with no effect on implant survival
   d. increases implant failure with no effect on graft survival

Wound healing Answer: c

133. All of the following are true regarding pre-cementing implant crowns on replica dies prior to definitive cementation except one. Which one is the exception?
   a. may reduce the retentive strength values of the restoration
   b. cement extravasation is minimized
   c. cement is evenly distributed achieving better retention for the restoration
   d. can be used with custom as well as prefabricated abutments

FDP Answer: c

134. Which of the following factors has the most negative effect on quality of life for patients treated for malignant disease of the maxilla:
   a. size of the defect created
   b. postoperative radiation therapy
   c. adjuvant chemotherapy
   d. prominent scar band

MF Answer: b
135. All of the following techniques can improve the fit of 3-unit cast metal frameworks for implant supported prostheses except one. Which one is the exception?

a. laser welding  
b. cement framework on prepared abutments  
c. one-piece casting  

**Implants Answer: c**  

136. How do platform switched bone level and tissue level implants compare regarding bone crest stability?

a. both implant designs show statistically similar bone stability  
b. tissue level implants show superior bone stability  
c. platform switched bone level implants show superior bone stability  
d. results differ between facial and interproximal locations  

**Implants Answer: c**  

137. What is the effect of a screw access channel located on the occlusal surface of zirconia-based implant supported crown restorations?

a. decreases load to fracture of veneered restorations only  
b. increases load to fracture of veneered and monolithic restorations  
c. has no significant effect on fracture resistance  
d. decreases load to fracture of veneered restorations and monolithic restorations  

**Implants Answer: c**  
138. Which solution assures optimum fixation of oral mucosal biopsy specimens for transport to the laboratory for routine microscopic diagnosis?

a. saline  
b. formalin  
c. Michel’s solution  
d. alcohol  
e. distilled water

Oral Path Answer: b  

139. All of the following can produce alterations in salivary flow rate except one. Which one is the exception?

a. hydration level  
b. chemotherapy  
c. bisphosphonates  
d. beta blockers

Pharm Answer: c  

140. What is the mechanism of action of penicillin?

a. interfere with cell wall synthesis  
b. inhibit the synthesis of protein  
c. interfere with nucleic acid synthesis  
d. inhibit the metabolic pathway

Pharm Answer: a  
141. What is the mechanism of action for the xerostomic effects of antihistamines?

   a. anticholinergic action  
   b. cholinergic action  
   c. inhibition of histamine-induced salivation  
   d. depression of salivary gland cells  

Pharm Answer: a  

142. Which mechanism of attachment is considered to be the most important for metal-ceramic restorations?

   a. Van der Waals forces  
   b. mechanical retention  
   c. direct chemical bonding  
   d. compression bonding  

Materials Answer: c  

143. What is the most important muscle in palatopharyngeal closure?

   a. superior constrictor  
   b. tensor palatini  
   c. palatoglossus  
   d. levator palatini  
   e. salpingopharyngeus  

Anatomy Answer: d  
144. A clinical presentation of desquamative gingivitis:

a. does not require biopsy
b. requires routine biopsy if the patient fails to respond to topical corticosteroid
c. requires biopsy if the patient fails to respond to systemic prednisone
d. requires routine biopsy

Oral Path Answer: d

145. The most common intraoral site for cicatricial pemphigoid (mucous membrane pemphigoid) is:

a. gingiva
b. hard palate
c. soft palate
d. buccal mucosa
e. tongue

Oral Path Answer: a

146. Which of the following pertains to the adaptation of bone in response to the types of loads under which it is placed?

a. Hooke’s Law
b. Wolff’s Law
c. Ante’s Law
d. Starling’s Law

Anatomy Answer: b

147. A patient presents with loosely adherent white material on the soft palate and buccal mucosa that can be wiped off leaving a painful mucosal surface. A presumptive clinical diagnosis is:

a. pseudomembranous candidiasis
b. cicatricial pemphigoid
c. lichen planus
d. recurrent aphthous stomatitis

Oral Path Answer: a
148. Which of the following cranial nerves does not innervate the soft palate and pharynx?

a. VIII  
b. IX  
c. X  
d. XI

**Anatomy Answer:** a  

149. What is the appropriate term used to describe the removal of the eyeball after the eye muscles and optic nerve have been severed?

a. exenteration  
b. evisceration  
c. enucleation  
d. globectomy

**MF Answer:** c  

150. Which one of the following muscles is not involved in determining the classification of the lateral throat form of a complete denture patient?

a. mylohyoid  
b. palatoglossus  
c. superior constrictor  
d. genioglossus

**Anatomy Answer:** d  