1. According to Schallhorn (1957), the arbitrary hinge axis will fall within ____ mm of the kinematic hinge axis.
   a. 2 mm
   b. 5 mm
   c. 7 mm
   d. 9 mm

   Answer: b

2. 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 implant and the posterior edges 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.

   Answer: b

3. Choose the correct statement about the functionally generated path technique.
   a. This technique simulates the jaw movement in the static record.
   b. A specially designed articulator such as verticulator is necessary for this technique.
   c. This technique is adequate only for the occlusal scheme of unilateral or bilateral group function.
   d. Programming of the articulator is important to design posterior occlusion in this technique.

   Answer: a

4. Choose the correct statement about the Hanau Quint.
   a. The Hanau Quint explains real jaw movement.
   b. The Hanau Quint consists of 5 main factors which can be managed by a dentist.
   c. Changes in one factor in the Hanau Quint equally influence the other factors.
   d. The Hanau Quint is purely based on mechanics.

   Answer: d

5. Which device was used to measure the vertical dimension by Dr. Niswonger?
   a. Profile Analyzer.
   c. Boos Bimeter.
   d. Plastic Ruler.

   Answer: b
6. Which of the following is an example of the graphic recording method for determination of centric relation position?
   a. ZOE paste on wax rim.
   b. Wax cone on the occlusion rim.
   c. Gothic arch tracing.
   d. Radiographic tracing.

   **Answer:** c


7. DiPietro studied the relation between disclusion type and FMA (Frankfort-Mandibular Plane Angle). Which of the following statements is correct?
   a. Most patients (51.8%) had pure canine disclusion.
   b. Most of the sample (53.6%) with low FMA (mean 19.6 degree) exhibited group function.
   c. Higher FMA (Mean 28.9 degrees) has fewer tendencies to have canine disclusion.
   d. There was no correlation.

   **Answer:** c


8. Which of the following statements regarding the Fischer’s angle is correct?
   a. Fischer’s angle is approximately 10 degrees.
   b. Fischer’s angle is formed when observed on the horizontal plane.
   c. Fischer’s angle is observed at the nonworking side condyle.
   d. Fischer’s angle is observed at the working side condyle.

   **Answer:** c


9. Which cranial nerve transmits periodontal proprioceptive impulses to the central nervous system?
   a. X.
   b. V.
   c. VI.
   d. VII.

   **Answer:** b


10. The periodontal ligament fibers affect(s) condylar position of the jaw by:
    a. Withstanding forces exerted.
    b. Sending out proprioceptive overload signals to change muscle activity.
    c. Inducing a protective response such as open reflex or inhibited movement.
    d. All of the above.

   **Answer:** d

11. When designing a removable partial denture on periodontally involved teeth, the following statements are true EXCEPT one. Which one is the exception?
   a. RPDs will lead to more plaque accumulation; requiring meticulous hygiene.
   b. Splinting abutments is indicated when periodontal support is reduced, or stress on the abutment teeth is high.
   c. Including periodontally involved teeth will lead to tooth loss.
   d. RPD design has to be more carefully assessed.

   Answer: c

12. Which theory and articulator does the picture illustrate?

   a. Bennett’s theory and articulator.
   b. Bonwill’s theory and articulator.
   c. Gysi’s theory and articulator.
   d. Monson’s theory and articulator.

   Answer: d

13. Which of the following anatomical structures determines the posterior limit of mandibular position?
   a. Ligaments.
   b. Muscles.
   c. Soft tissue posterior to mandibular condyles.
   d. Bone.

   Answer: b

14. How is cusp height and fossa depth related to the canine and condylar guidance?
   a. There is no relationship among those components.
   b. Cusp height and fossa depth varies in relation to the distance between canine and condyle.
   c. Cusp height is more affected than fossa depth by canine and condylar guidance.
   d. Cusp height and fossa depth can be determined regardless of canine guidance.

   Answer: b
15. Which type(s) of blockout can be utilized on the definitive cast for removable dental prosthesis framework fabrication?
   a. Shaped blockout.
   b. Paralleled blockout.
   c. Arbitrary blockout.
   d. All of the above.

   **Answer:** d

16. Maxillary incisal exposure is found to:
   a. Increase with age.
   b. Decrease with age.
   c. Be unchanged with age.
   d. Be unpredictable with age.

   **Answer:** b

17. Based on the current literature, what is the most common complication for a single crown?
   a. Need for endodontic therapy.
   b. Caries.
   c. Unacceptable aesthetic.
   d. Gingival inflammation.

   **Answer:** a

18. A recent systematic review and meta-analysis of the literature, found which of the following to be true related to implants retaining or supporting overdentures?
   a. Significant differences in marginal bone loss are related to implant type.
   b. Significant differences in marginal bone loss are related to attachment type.
   c. No significant differences in marginal bone loss are related to implant or attachment type.
   d. Significant differences in marginal bone loss are related to both implant and attachment type.

   **Answer:** c

19. When comparing the microorganisms present on poly (methyl methacrylate) and titanium obturators, it was found that:
   a. A greater percentage of titanium surfaces were colonized by abnormal bacterial species.
   b. The tissues adjacent to poly (methyl methacrylate) obturators were contaminated more frequently than in patients with titanium obturators.
   c. Penetration of microbes was found in the titanium material.
   d. Poly (methyl methacrylate) provided a healthier option for maxillofacial prostheses.

   **Answer:** b
20. In children with ectodermal dysplasia, what is the percentage of temporomandibular joint complications that results from an increase in the occlusal vertical dimension?
   a. 0 Percent.
   b. 25 Percent.
   c. 50 Percent.
   d. 75 Percent.

Answer: a

21. In males, the typical contact of the soft palate to the posterior pharyngeal wall is at a point above the palatal plane. Where does the contact occur in females?
   a. At or above the palatal plane.
   b. At the palatal plane.
   c. At or below the palatal plane.
   d. At the level of the first cervical vertebrae.

Answer: c

22. The bond strength between fiber-reinforced post and resin-based luting material can be influenced by post surface treatment. Which of the following treatments for fiber reinforced posts results in the highest bond strength?
   a. Hydrofluoric Acid.
   b. Silanization of the post.
   c. Air-borne particle abrasion of the post.
   d. Air-borne particle abrasion of the post, then silanization.

Answer: c

23. Which of the following scaling procedures caused the least change in the profilometer reading (surface roughness) of zirconia surfaces?
   a. Use of a steel curette.
   b. Use of a piezoelectric ultrasonic scaler.
   c. Use of a titanium curette.
   d. Use of an ultrasonic scaler with steel tips.

Answer: a

24. Pre-machined abutments for cement retained implant restorations can generally be used if the distance from the implant restoration platform to the occlusal surfaces of the opposite dentition is between:
   a. 1 mm and 4 mm.
   b. 5 mm and 9 mm.
   c. 10 mm and greater.

Answer: b

25. In regards to platform switching, which one of the following factors controlling crestal bone levels around implants is the most important?
   a. A minimum of 3 mm of soft tissue to create a biological seal.
   b. The proximity of the abutment inflammatory cell infiltrate to the crestal bone.
   c. The implant surface topography.
   d. All of the above.

   **Answer:** d


26. Components of composite resins include all of the following EXCEPT one. Which one is the exception?
   a. An organic polymer matrix.
   b. An inorganic filler.
   c. A coupling agent.
   d. An initiator-accelerator system.
   e. Benzoyl peroxide.

   **Answer:** c


27. All of the following are true for gram positive bacteria cell walls EXCEPT:
   a. Composed of a thick peptidoglycan layer.
   b. Presence of lipopolysaccharides.
   c. Presence of teichoic and lipoteichoic acid.
   d. Acid-fast staining results in a purple stain.

   **Answer:** b


28. Transformation toughening of zirconia-based ceramics involves which of the following?
   a. A rapid phase change from the monoclinic state to the tetragonal state at room temperature.
   b. Volumetric increase of the ceramic while in a metastable phase, which decreases local stress intensity.
   c. Expansion of grain diameter in the presence of moisture which hinders crack formation and propagation.
   d. Phase transformation from the tetragonal state to the cubic state.

   **Answer:** b


29. “The biological effects of radiation as opposed to the physical aspects, which are characterized by the absorbed dose” is the definition of which of the following?
   a. Gray
   b. Rem
   c. Sievert
   d. Roentgen

   **Answer:** c

30. During the fabrication of interim fixed prostheses, which of the following is the most important aspect to be tested for a Class II, Division 1, patient?
   a. Envelope of Function.
   b. Position of Centric Relation.
   c. Balanced Occlusion.
   d. Cusp-fossa Relationship.

Answer: a

31. Fabricating implant overdenture prostheses with inadequate restorative space may result in all the following EXCEPT one. Which one is the exception?
   a. Physiologically inappropriate contours.
   b. Weak prostheses.
   c. Increased retention and stability.
   d. Esthetic compromise.
   e. Encroachment into interocclusal space.

Answer: c

32. Which of the following implant overdenture techniques allows visualization of the planned prosthesis with the underlying osseous structure?
   a. Stone facial matrix.
   b. Occlusal denture tooth matrix.
   c. Complete denture and Boley gauge.
   d. Wax trial denture on articulated casts.
   e. CBCT with radiographic template.

Answer: e

33. Lithium Disilicate Reinforced Ceramics are characterized by all of the following EXCEPT one. Which of the following is the exception?
   a. Can be etched with hydrofluoric acid.
   b. Require shorter (20sec) etch time.
   c. Exhibit an amorphous microstructure.
   d. Can be silanated to create a thin bi-functional layer partially covered with Li2Si2O5.

Answer: c
34. Each of the following is a mechanism to bond metal and porcelain, **EXCEPT** one. Which one is the exception?
   a. Compression bonding.
   b. Interfacial adhesion.
   c. Mechanical retention.
   d. Van der Waals forces
   e. Direct chemical bonding.

**Answer:** b

35. Each of the following are advantages for Krol’s RPI concept, **EXCEPT** one? Which one is the exception?
   a. The I-bar moves in a mesiobuccal direction under a masticatory load.
   b. The mesial rest acts as a point of rotation, exerting a force on the adjacent tooth.
   c. Physiologic relief is required for the proximal plate when pressure is exerted on the denture base.
   d. The rest, proximal plate and I-bar prevent migration of abutment.

**Answer:** b

36. What is the average **diameter** of the sphere as Monson describes it?
   a. 8 centimeters.
   b. 8 inches.
   c. 4 centimeters.
   d. 4 inches.

**Answer:** b

37. The normal pH of saliva is _______.
   a. 4 - 5.
   b. 5 - 6.
   c. 6 - 7.
   d. 7 - 8.

**Answer:** c

38. The angle formed by the occlusal rest and the vertical minor connector from which it originates in a RPD should be:
   a. Less than 45°.
   b. Less than 60°
   c. Less than 90°
   d. Greater than 90°
   e. Greater than 120°

**Answer:** c
39. All of the following statements are false Fischer’s angle – **EXCEPT** for one. Which one is the exception?
   a. Fischer’s angle **cannot** be reproduced on a non-arcon articulator.
   b. Fischer’s angle is the sum of the protrusive and mediotrusive angles.
   c. Fischer’s angle **cannot** be reproduced on a fully adjustable, non-tracking dental articulator.
   d. Fischer’s angle represents the rotating condylar movement in relation to its protrusive path.

**Answer: a**


40. With regard to mercury release from modern amalgam dental restorations and potential health hazards, what evidence-based conclusions can be made?
   a. Amalgam restorations do not release mercury.
   b. Mercury vapors released from amalgam restorations have been shown to adversely affect kidney function.
   c. Mercury vapors released from amalgam restorations have been shown to adversely affect neural tissue and function.
   d. Mercury vapors released from amalgam restorations have been shown to adversely affect the immune system.
   e. No definitive evidence exists that amalgam is a direct hazard to patient health.

**Answer: c**


41. The International Classification of Sleep Disorders classifies sleep disordered breathing into five major categories. Which of the following is **NOT** one of the major categories?
   a. Central sleep apnea.
   b. Sleep-related hypoventilation syndrome.
   c. Obstructive sleep apnea.
   d. Excessive nighttime snoring.
   e. Sleep-related hypoventilation secondary to existing medical conditions.

**Answer: d**


42. The Apnea-Hypopnea Index (AHI) is used to qualify the severity of sleep disordered breathing. The AHI range for “moderate sleep apnea” is ________.
   a. 0 – 5.
   b. 6 – 14.
   c. 15 – 30.
   d. 31 – 44.
   e. 45+. 

**Answer: c**

43. When denture base monomer and polymer are mixed in the proper proportions, a workable mass is produced. On standing, the resultant mass passes through five distinct stages. Which of the following does NOT represent one of those five stages?
   a. Stringy.
   b. Sticky.
   c. Sandy.
   d. Dough-like.
   e. Stiff.

Answer: b

44. In general, volumetric shrinkage of poly (methyl methacrylate) denture base resins upon polymerization is 7 percent. On average, what is the expected linear shrinkage upon polymerization?
   a. < 1 Percent.
   b. 3 – 5 Percent.
   c. 6 – 7 Percent.
   d. > 7 Percent.

Answer: a

45. What percentage of the fibers of the superior lateral pterygoid muscle attach to the disc?
   a. <1 Percent
   b. 1 - 3 Percent
   c. 3 – 5 Percent
   d. 8 – 10 Percent
   e. 30 - 40 Percent

Answer: c

46. Which of the following statements is true regarding the effect of the bur type used for crown preparation on the retention of cemented castings?
   a. Both carbide and diamond burs give the same amount of retention.
   b. The retention is significantly improved when carbide bur is used.
   c. The retention is significantly improved when diamond bur is used.
   d. There is no significant association between crown retention and the type of bur used for preparation.

Answer: c

47. The angle formed by the occlusal rest and the vertical minor connector from which it originates in a RPD should be:
   a. Less than 45°
   b. Less than 60°
   c. Less than 90°
   d. Greater than 90°
   e. Greater than 120°

Answer: c
48. Factors describing the advantages of implant supported and retained restorations include:
   a. Preservation of tooth structure.
   b. Preservation of bone.
   c. Provision of additional support.
   d. Resistance to dental disease.
   e. All of the above.
Answer: c


49. Common microorganisms seen in bisphosphonate-induced osteonecrosis of the jaws include all of the following EXCEPT one. Which of the following is the exception?
   a. Actinomyces
   b. E. Coli
   c. Moraxella
   d. Eikenella
Answer: b


50. Which of the following is the result of an investment being heated in a burnout oven to eliminate the wax pattern and prevent the alloy from solidifying prior to completely filling the mold:
   a. Tax pattern expansion
   b. Thermal expansion
   c. Hygroscopic expansion
   d. Setting expansion
Answer: b


51. What is the least common type of complication reported in conjunction with endosseous root form implants and associated implant prostheses?
   a. Loosening of the overdenture retentive mechanism.
   b. Implant fracture.
   c. Implant loss in irradiated maxillae.
   d. Hemorrhage-related complications.
   e. Prosthesis fracture.
Answer: b


52. According to Turner and Missirlian, how might one go about treating a patient exhibiting category II attrition?
   a. Use of a removable occlusal device for 6-8 weeks to determine the vertical dimension.
   b. Combination of orthodontic intrusion and surgical means to gain restorative space and retention.
   c. Simple crown lengthening.
   d. Surgical repositioning of segments.
Answer: c

53. In the shortened dental arch concept, 20 teeth can satisfy most of the criteria for an acceptable level of oral health and oral functional needs. The rational for replacement of the missing teeth is based upon the:
   a. Position of missing teeth.
   b. Age of the patient.
   c. Occlusal forces.
   d. Number of occluding pairs of teeth.
   e. All of the above.

Answer: e

58. The most common complication encountered with the distraction osteogenesis procedure is:
   a. Paresthesia.
   b. Need for additional soft tissue grafting.
   c. Compromised esthetics.
   d. Infection.

Answer: b


59. Based on the Hanau Quint, how can you achieve bilateral balanced occlusion when the patient has steep condylar guidance?
   a. By increasing occlusal plane, cusp height and/or compensating curve.
   b. By increasing cusp height, incisal guidance and/or curve of Wilson.
   c. By decreasing fossa depth, curve of Spee and/or plane of orientation.
   d. By decreasing occlusal plane, incisal guidance and/or cusp height.

Answer: a


60. Testing the reliability and validity of an electronic pantograph on different calibrated articulators revealed that:
   a. There were no differences in the progressive lateral translation at 3, 5 and 10 mm movement from the centered articulator position.
   b. The mean deviations of the horizontal condylar inclination at 10 mm condylotrack distance for the various articulators were less than 5 degrees.
   c. A 10 mm condylotrack distance from the starting centered position produced the most consistent and valid readings.
   d. Large discrepancies were observed in the recording on different articulator systems.

Answer: c


61. A study looking at the supraeruption of unopposed molars revealed which of the following:
   a. Supraeruption occurred 53% of the time.
   b. Supraeruption was more prevalent in the mandibular arch.
   c. Identified two types of supraeruption.
   d. Attachment loss was one of the main predictors of supraeruption.

Answer: d


62. The standard deviation is a measure of:
   a. Central tendency.
   b. Dispersion.
   c. Number.
   d. The accuracy of the mean.
   e. Normality.
63. One would expect to find certain characteristics in a patient with a low or high FMA that might impact on prosthodontic treatment. All of the following are characteristic of a low FMA EXCEPT one. Which one is the exception?
   a. Short clinical crowns.
   b. Increased biting force.
   c. Increased zone of attached gingiva.
   d. Broad and flat palatal vault.

Answer: c

64. Increasing the water/powder ratio of a gypsum product will have what effect on setting time and setting expansion?
   a. Increase setting time and decrease setting expansion.
   b. Increase setting time and increase setting expansion.
   c. Decrease setting time and increase setting expansion.
   d. Decrease setting time and decrease setting expansion.

Answer: a

65. Which of the following changes occur to the bony architecture following immediate implant placement into an extraction socket?
   a. Greater than 50% buccal and 30% lingual resorption.
   b. Greater than 70% buccal and 60% lingual resorption.
   c. 30% buccal and 70% lingual resorption.
   d. There is no resorption of the ridge.

Answer: a

66. Inflammatory papillary hyperplasia is characterized by each of the following statements EXCEPT one. Which one is the exception?
   a. Reactive tissue growth that usually develops beneath a denture.
   b. Usually asymptomatic.
   c. Often associated with denture stomatitis.
   d. Often subsides in minor cases with removal of the denture.

Answer: e

67. Which bone quality would be considered the highest anatomical risk factor for long-term implant placement?
   a. Type I.
   b. Type II.
   c. Type III.
   d. Type IV.
Answer: d  

68. Which of the following statements is correct for crown margin placement:
   a. The deeper the margin placed within the gingival crevice, the greater the severity of gingival inflammation.
   b. Subgingival placement of the crown margin may dynamically modify the distribution pattern of bacterial plaque and favors gram negative anaerobes.
   c. Subgingival margins may violate biological width and subsequently lead to apical migration of the epithelium.
   d. All of the above

Answer: d  

69. Beneficial outcomes for apically-positioned flap procedures include all of the following EXCEPT one. Which one is the exception?
   a. The mucogingival complex can be maintained.
   b. Enhanced Esthetics.
   c. Minimized post-treatment pocket depth.
   d. Minimized post-treatment bone loss.

Answer: b  

70. At the metal framework try-in of a fixed partial dental prosthesis, the margins are all closed. After porcelain application, the margins are now all open at the clinical try-in. The probable reason is the:
   a. Dies were over-trimmed.
   b. Lab cut off all the metal margins.
   c. Casting distorted during the porcelain application.
   d. Porcelain proximal contacts were over-contoured.

Answer: d  

71. One year following prosthesis insertion, the most statistically significant relationship to implant loss is associated with:
   a. Areas of prior advanced bone resorption.
   b. Areas of prior endodontic therapy.
   c. Young adults.
   d. Implant surface type.
   e. None of the above.

Answer: a  
72. Which of the following is an advantage of posterior partial veneer crowns?
   a. Ease of seating verification.
   b. Ability to modify axial contours for an RPD abutment.
   c. Increased gingival irritation.
   d. Ease of tooth preparation.

   **Answer:** a

73. The initiator in light-activated resin is:
   a. Hydroquinone.
   b. Dimethyl-p-toluidine.
   c. Camphorquinone.
   d. Glycol Dimethacrylate.
   e. Benzoyl Peroxide.

   **Answer:** c

74. The intrinsic muscles of the tongue are:
   a. Superior longitudinal, inferior longitudinal, transverse, vertical.
   b. Superior longitudinal, inferior longitudinal, genioglossus, palatoglossus.
   c. Genioglossus, palatoglossus, hyoglossus, styloglossus, chondroglossus.
   d. Transverse, vertical, hyoglossus, styloglossus.

   **Answer:** a

75. Which of the following is not an insertion point for the superior lateral pterygoid muscle?
   a. TMJ articular capsule.
   b. TMJ disc.
   c. Superior-medial surface of the mandibular condyle.
   d. Neck of the mandibular condyle.

   **Answer:** c

76. Enamel is a highly mineralized tissue consisting of what percentage of hydroxyapatite?
   a. 100.
   b. 96.
   c. 89.
   d. 83.
   e. 77.

   **Answer:** b
77. The major advantage of computed tomography over linear tomography or panoramic radiography in imaging for implant placement is:
   a. Cost.
   b. Radiation dose.
   c. Dimensional accuracy.
   d. Convenience.
   e. None of the above.

Answer: c

78. According to the Caries Management by Risk Assessment (CAMBRA) model, all of the following are Caries Risk/Disease Indicators EXCEPT one. Which one is the exception?
   a. Lesions that radiographically penetrate into dentin.
   b. Approximal radiographic lesions confined to the enamel only.
   c. Visual white spots on smooth surfaces.
   d. Deep pits and fissures.

Answer: d

79. According to Gysi, the average progressive mandibular lateral translation is:
   a. 7 degrees.
   b. 10 degrees.
   c. 15 degrees.
   d. 30 degrees.

Answer: c

80. If you prescribe atropine to reduce salivary flow, you should advise the patient that the following side effect(s) may be experienced:
   a. Dryness and burning of the throat.
   b. Vasodilation of skin capillaries with flushing.
   c. Blurred vision.
   d. All of the above.

Answer: d

81. Each of the following statements regarding basic obturator design and classification for the partially edentulous patient is correct EXCEPT one. Which one is the exception?
   a. Aramany’s Classification System is divided into six different groups based upon the relationship of the defect area to the remaining abutment teeth with class sequence being a reflection of frequency of occurrence.
   b. In Aramany Class III cases the defect is located in the central portion of the hard palate and the design is based on quadrilateral configurations.
   c. In Aramany Class IV cases the defect includes the pre-maxilla on the nonsurgerized side and the design is linear.
   d. When treatment planning with the surgeon, the prosthodontist should make recommendations directed toward converting a potential Aramany Class II defect into an Aramany Class I defect.
Answer: d

82. Each of the following statements regarding gold-palladium (Au-Pd) alloys is correct EXCEPT one. Which one is the exception?
   a. The Au-Pd alloys were developed in an attempt to overcome the two major problems associated with silver-containing alloys: porcelain discoloration and a high coefficient of thermal expansion.
   b. The only significant disadvantage of the Au-Pd alloys is their poor sag resistance.
   c. The Au-Pd alloys exhibit a “white gold” color and have been commercially successful.
   d. Due to the Au-Pd alloys’ low silver content, porcelain does not discolor, castability is improved and the coefficient of thermal expansion is increased.

Answer: b

83. Flexural strength and flexural modulus of resin materials for interim fixed prostheses are important properties that may correlate with degree of conversion. Select the correct response below:
   a. Mechanical property stability is indirectly related to the time post fabrication.
   b. Mechanical property stability is directly related to the time post fabrication.
   c. The degree of conversion is directly related to mechanical stability.
   d. Liquid/powder ratio does not influence degree of conversion.

Answer: b

84. What is the best flame direction in soldering?
   a. Vertical.
   b. Horizontal.
   c. Oblique.
   d. All of the above.

Answer: c

85. What is the average dimension of the biologic width in millimeters?
   a. 0.5.
   b. 1.
   c. 2.
   d. 3.
   e. 4.

Answer: c

86. How does an increase in intercondylar distance affect mandibular posterior tooth morphology?
   a. Maxillary tooth grooves and ridges must be oriented more distal.
   b. Mandibular tooth grooves and ridges must be oriented more mesial.
   c. Mandibular cusps must be shorter.
   d. Mandibular tooth grooves and ridges must be oriented more distal.
   e. Maxillary cusps may be longer.
Answer: d

87. Monomethacrylate and dimethacrylate materials undergo shrinkage which may lead to marginal inaccuracies of the subsequent restorations. Select the correct response(s) below:
   a. Marginal discrepancies increase as a function of storage time.
   b. Shrinkage values are not suitable in predicting marginal inaccuracy.
   c. Since marginal gap increases with elapsed time, some predictable time should expire between fabricating and trimming restorations.
   d. All of the above.

Answer: d

88. The Weibull Modulus is:
   a. A measure of the elasticity.
   b. A measure of the flaw distribution.
   c. A measure of failure for ceramics.
   d. Smaller for homogeneous materials.

Answer: b

89. Which of the following is NOT a function of a guiding plane surface for a removable partial denture?
   a. Provide for one path of insertion and removal for the denture.
   b. Reduce food entrapment between the teeth and prosthesis.
   c. Provide retention against dislodgement forces parallel to the path of removal.
   d. Provide stabilization against horizontal rotation.

Answer: c

90. All of the following descriptions are true about the shade of teeth EXCEPT one. Which one of the following is the exception?
   a. Incisal third displays the highest value.
   b. Value is the most influential in shade matching.
   c. Chroma and value are inversely related.
   d. Dentin appears 3 times more fluorescent than enamel.

Answer: a

91. All of the following are true about dental porcelain, EXCEPT:
   a. Low fusing dental porcelain is classified as < 870°C.
   b. Kaolin is added to dental porcelain to increase its stabilization during porcelain building.
   c. During the fritting process molten glass shatters on contact with cold water to form a crystalline powder.
   d. Matched coefficient of thermal expansion of porcelain should ensure residual compressive stresses
The lateral cephalometric planes are an aid for determining relationships that are keys to diagnosis and treatment planning in prosthodontics. The McNamara line relates the:

- Anteroposterior relationship of maxilla and mandible to cranial base.
- Relationship of maxillary teeth to maxilla.
- Relationship of mandibular teeth to the mandible.
- Vertical relationship of mandible and maxilla to cranial base and to each other.

**Answer:** a.

### Question 93
When comparing shortened dental arches to complete dental arches, each of the following is true EXCEPT one. Which one is the exception?

a. Shortened dental arches have similar vertical overlap and occlusal tooth wear.
b. Shortened dental arches show more interdental spacing in the premolar regions and more anterior teeth in occlusal contact.
c. Shortened dental arches increase the incidence of temporomandibular joint pain.
d. Shortened dental arches can provide long-term occlusal stability.
e. Shortened dental arches meet the requirements of a functional dentition.

**Answer:** c

### Question 94
Each of the following medications may be used to treat gastroesophageal reflux disease EXCEPT one. Which one is the exception?

a. Acid neutralizing agents (Sodium bicarbonate, Magnesium hydroxide, Aluminates).
b. Acetaminophen (Analgesic).
c. Histamine 2 blockers (Cimetidine, Ranitidine).
d. Proton pump inhibitors (Omeprazole, Prevacid).
e. Prokinetic agents (Cisapride).

**Answer:** b

### Question 95
Each of the following is an advantage of laser application in dentistry EXCEPT one. Which one is the exception?

a. Lasers offer both selection and precision when interacting with diseased tissues.
b. Er lasers can be used to remove or recontour osseous tissue.
c. Lasers can reduce the amount of bacteria and other pathogens in the surgical field.
d. Lasers can achieve hemostasis and reduce the need for sutures.
e. A single wave length can be used to optimally treat all dental diseases.

**Answer:** e

### Question 96
The nonworking condylar path is a curved path that slopes downward, forward, and medially. What is the medial movement that is measured in the sagittal plane?

a. Bennett’s movement.
b. Fischer’s angle.
c. Bennett angle.
d. Mandibular Lateral Translation.

**Answer:** b  

97. Intensity-modulated radiation therapy (IMRT) has been used to treat head and neck cancer. Each of the following is true **EXCEPT** one. Which one is the exception?

a. IMRT offers the potential for improved tumor control through delivery of high doses to the 3 D configuration of the target volume.
b. Like the conventional radiation treatment, IMRT has a uniform radiation dose on all areas exposed to radiation.
c. Providing sharp dose gradients, IMRT results in the relative sparing of normal structures such as the parotid glands in the head and neck region.
d. IMRT decreases xerostomia compared with conventional radiation treatment.

**Answer:** b  

98. Each of the following has been proposed to improve the outcome for implant therapy in osteoporotic patients **EXCEPT** one. Which one is the exception?

a. A longer healing period after implant placement.
b. Under preparation of the diameter of the osteotomy.
c. Using the osteotome technique.
d. Using root form implants.
e. Reducing the depth of the osteotomy.

**Answer:** c  

99. Each of the following statements about the anatomy and function of the TMJ is correct **EXCEPT** one. Which one is the exception?

a. TMJ is a compound joint with two distinct joint movements.
b. The disc is tightly bound to the condyle by the lateral and medial discal ligaments. This condyle-disc complex is responsible for rotational movement in the TMJ.
c. The translational movement occurs when the mandible is moved forward and the condyle-disc complex is sliding against the surface of the mandibular fossa.
d. In the resting state, all the muscles of mastication are completely at rest when the joint is in the resting state.

**Answer:** d  

100. Each of the following statements relating to the treatment of TMD is correct **EXCEPT** one. Which one is the exception?

a. The most important task of the clinician is establishing the proper, accurate diagnosis.
b. Treatment of TMD may be categorized into one of the two groups: conservative (reversible) and non-conservative (irreversible).
c. The reversible approach should be considered first.
d. Definitive treatment is directed toward controlling or eliminating the causes of the disorder whereas supportive therapy is directed toward altering patient symptoms.
e. Increased emotional stress is not a common cause of TMDs.
101. Each of the following is a recommendation for caries management in prosthodontic patients EXCEPT one. Which one is the exception?
   a. Prior to initiating treatment, clinicians should discuss with the patient the importance of a caries reduction program during and following prosthodontic treatment.
   b. For patients with gingival recession and other risk factors for caries, a fluoride varnish on root surfaces three times annually is necessary.
   c. Patients should be encouraged to brush with fluoridated toothpaste a minimum of twice daily.
   d. Patients should be encouraged to chew xylitol-containing gum twice daily for 60 minutes with a total xylitol dose of 12 to 20 g per day.
   e. Patients should rinse with 10 ml of 0.12% chlorhexidine for 1 minute each night. This should occur at least 1 hour after brushing with fluoridated toothpaste and after removing any prosthesis.

Answer: d

102. What is the minimum number of implants normally recommended for a removable overdenture prosthesis retained by implants?

Answer: b

103. Early wound healing around implants involves phenotypic conversion of mesenchymal cells into bone-forming cells. What is the term given to this phenomenon?
   a. Osseoinduction.
   b. Osseoinversion.
   c. Contact osteogenesis.
   d. Appositional bone growth.
   e. Osseoconduction.

Answer: a

104. What is NOT a commonly used material to fill screw access openings?
   a. Composite resin.
   b. Rubber-based material.
   c. Gutta-percha.
   d. Light-polymerized provisional composite resin.
   e. Medical grade adhesive.

Answer: e
105. The influence of periodontal disease on long-term survival of immediate or staged implant placement revealed that:
   a. There is a significant difference in long-term implant survival between patients with periodontal disease prior to immediate or staged implant placement, compared to patients without disease.
   b. Long term success of dental implants is not related to past periodontal disease history.
   c. Patients with a history of periodontal disease have minimal risk for implant failure when staged implant placement is employed.
   d. There is no significant difference in long-term implant survival between patients with or without periodontal disease.

Answer: a

106. Methods used to create adequate quantity of bone for implant placements include each of the following EXCEPT one. Which one is the exception?
   a. Cortical plate expansion.
   b. Lengthening the implant integration time.
   c. Sinus augmentation.
   d. Distraction osteogenesis.

Answer: b

107. During implant surgery it is important to use profuse irrigation, light pressure and sharp drills to ensure that the temperature of the bone does not exceed:
   a. 37°C for 10 minutes.
   b. 44°C for 5 minutes.
   c. 44°C for 1 minute.
   d. 47°C for 5 minutes.
   e. 47°C for 1 minute.

Answer: e

108. Dental implant surface roughness is characterized by Sa values denoted as an average ratio of microscopic peaks to valleys. Implants with moderately rough surfaces (1-2µm) have been described to have the following characteristics:
   a. More enhanced bone fixation than turned implants/
   b. Elevated threshold of micromovement.
   c. More robust bone response in compromised host sites.
   d. All of the above.

Answer: d
109. The best way to eliminate complete denture processing errors and to adjust the occlusion is to:
   a. Tell the technician to take care of it.
   b. Allow the denture to settle to compensate for disharmony.
   c. Remount and adjust occlusion one week later.
   d. Remount after processing and adjust occlusion at insertion.

   **Answer:** d


110. The prolonged use of antihistamines may produce xerostomia. This results from their:
   a. Anticholinergic action.
   b. Cholingergic action.
   c. Inhibition of histamine-induced salivation.
   d. Direct depression of salivary gland cells.

   **Answer:** a


111. Clinical studies of Zirconia all – ceramic fixed partial dentures reveal:
   a. Framework fractures occurs 80% of the time.
   b. The most frequent technical problem is chipping of the veneering material.
   c. Secondary caries at the margin of the abutments.
   d. Loss of retention within a year due to cementation failure.

   **Answer:** b


112. The factors influencing shade selection by a human observer includes:
   a. Age of the observer.
   b. The wavelength of electromagnetic energy of the illuminant.
   c. The surroundings of the object.
   d. The reflectance and transmittance of the object.
   e. All of the above.

   **Answer:** e


113. According to the Kennedy Classification System for edentulous arches and Applegate’s rules for classification, what is the correct classification of the following scenario? A patient presents missing only teeth #7, 8, and 9 of the maxillary arch and due to caries you extract tooth #3. What is the patient’s correct classification prior to the extraction and after?
   a. Kennedy Class 3; Kennedy Class 4 Modification 1.
   b. Kennedy Class 4; Kennedy Class 3 Modification 1.
   c. Kennedy Class 3; Kennedy Class 4 No Modification.
   d. Kennedy Class 4; Kennedy Class 3 No Modification.
114. What is the most common material used for fabrication of maxillofacial prostheses?
   a. Polyurethane elastomers.
   b. Room temperature vulcanizing silicone elastomers.
   c. Heat vulcanizing silicone elastomers.
   d. Chlorinated polyethylene.
   **Answer: b**

115. What is the normal variation of the FMA (Frankfort Mandibular Plane Angle)?
   a. 6 - 15 degrees.
   b. 16 - 35 degrees.
   c. 36 - 45 degrees.
   d. 46 - 65 degrees.
   **Answer: b**

116. When mounting working casts, which of the following has the most important influence on the precision of occlusal contacts:
   a. Facebow transfer.
   b. Impression material.
   c. Interocclusal record.
   d. Terminal hinge axis determination.
   **Answer: c**

117. Which is the most important factor for achieving retention of a maxillary complete denture?
   a. Cohesion.
   b. Peripheral Seal.
   c. Adhesion.
   d. Undercuts.
   e. Atmospheric Pressure.
   **Answer: b**

118. The maximum film thickness of Type I Zinc Phosphate cement according to the ADA specification #96 is:
   a. 15 Micrometers.
   b. 25 Micrometers.
   c. 40 Micrometers.
   d. 100 Micrometers.
Answer: b
Reference: ADA specification #96.

119. Sequence the following steps in the correct order when designing the framework for a Maxillary Kennedy Class II Removable Partial Denture.
   a. Undercuts are identified.
   b. Tripod marks are placed in maxillary cast.
   c. Vertical overlap of mandibular anterior teeth is recorded on the maxillary cast.
   d. Path of insertion for removable partial denture is determined on the surveying table.
   e. Framework design is drawn.
   f. Survey lines are transferred to the stone surfaces of maxillary teeth and soft tissue areas adjacent to abutment teeth.
   a. d, b, f, a, e, c.
   b. a, d, b, f, e, c.
   c. c, d, b, f, a, e.
   d. c, a, d, f, e.

Answer: c

120. All of the following are considered disadvantages of replacing a mandibular second molar with an implant EXCEPT one. Which one is the exception?
   a. Second molars provide less than 5% of total chewing efficiency.
   b. Check biting is more common.
   c. Access for hygiene is easy.
   d. Frequently exhibit occlusal interference during excursion movements.
   e. Implants may need to be placed buccal, in relation to the maxillary tooth.

Answer: c

121. In Removable partial denture design, which of the following is NOT a function of indirect retainers?
   a. Reduces anterior-posterior tilting leverages on the principal abutments.
   b. Resist movement of a distal extension bases away from the tissue.
   c. Provide a visual indication of the need to reline the extension base.
   d. Resist forces parallel to the path of insertion of the RPD.
   e. Stabilize anterior teeth against lingual movement.

Answer: d

122. As it relates to stability, the most critical time during the healing process of a newly placed implant is the ___________, as existing bone is lost and stability is achieved through new bone growth.
   a. First week
   b. First to second week
   c. Second to third week
   d. Third to fourth week

Answer: c

123. According to Aull’s, laterotrusion of the rotating condyle, accompanied by a downward movement of the same condyle results in:
   a. Shorter cusps on both the working and nonworking sides.
   b. Longer cusps on both the working and nonworking sides.
   c. Shorter cusps on the working side and longer cusps on the nonworking side.
   d. Longer cusps on the working side and shorter cusps on the nonworking side.

Answer: b

124. All of the following parameters will affect temperature at the drill-bone interface EXCEPT one? Which one is the exception?
   a. Drill speed and time.
   b. Depth of osteotomy and thickness of bone.
   c. Drill diameter.
   d. Externally vs. internally irrigated drill system.
   e. Temperature and quantity of irrigant.

Answer: d

125. How does alteration of the curve of Spee affect posterior tooth morphology?
   a. The shorter the curve radius, the shorter posterior cusps.
   b. The longer the curve radius, the shorter posterior cusps.
   c. The shorter the curve radius, the more distal maxillary tooth groove and ridge orientations.
   d. The shorter the curve radius, the more mesial maxillary tooth groove and ridge orientations.
   e. The shorter the curve radius, the more distal mandibular tooth groove and ridge orientations must be.

Answer: a

126. The tooth preparation of choice in areas in close proximity to furcations, root concavities, and other areas where the tooth is rapidly diverging from the area of the preparation is a ________ margin.
   a. Shoulder
   b. Shoulder & Bevel
   c. Feather Edge
   d. Chamfer

Answer: c

127. Bonwill’s triangle is an equilateral triangle that connects the:
   a. Right condyle, left condyle, and incisal edge of maxillary incisors at the midline.
   b. Right condyle, left condyle, and glabella.
   c. Right condyle, left condyle, and nasion.
d. Right condyle, left condyle, and incisal edge of mandibular incisors at the midline.

**Answer:** d


128. The path of the nonworking condyle during laterotrusive movement is a curved and slopes downward, forward, and medially. When compared to the protrusive path of the same condyle, what is the medial movement as measured in the sagittal plane?

a. Camper’s angle.
b. Fischer’s angle.
c. Bennett’s angle.
d. Laterosurtrusion angle.

**Answer:** b


129. Due to osseointegration, proprioception associated with dental implants differs from that of natural teeth. Those differences include:

a. Proprioceptive nerve endings in the cribriform plate contribute to occlusal awareness in implant patients.
b. Occlusal overload produces severe deleterious biological outcomes for osseointegrated implants.
c. Clinical function is reduced in patients with extensive implant supported restorations, without the benefit of periodontal proprioceptive nerve endings.
d. Extreme differences in tactile sensation exist between natural teeth and implants.

**Answer:** d


130. What is the principal challenge when using osseointegrated implants in fibula free flaps?

a. Soft tissue hypertrophy.
b. Proper position and angulation.
c. Decreased survival rates.
d. Initial anchorage and stability.

**Answer:** a


131. What is the term that describes early wound healing around endosseous implants that involves phenotypic conversion of mesenchymal cells into bone-forming cells?

a. Osseoinduction.
b. Osseoconduction.
c. Appositional bone growth.
d. Contact osteogenesis.

**Answer:** a

132. According to a meta-analysis of the survival of fixed partial dental prostheses, the most frequent cause of biological failure is due to:
   a. Caries.
   b. Pulpal necrosis.
   c. Periodontal disease.
   d. Tooth fracture.
   e. Lack of retention.

Answer: b

133. The ADA 1984 classification for dental casting alloys includes each of the following EXCEPT one. Which one is the exception?
   a. High noble metals contain 60 wt% or greater noble metal elements.
   b. Noble metals contain 40 wt% or greater noble metal elements.
   c. Noble metal elements include: Au, Ir, Os, Pt, Rh, Ru.
   d. Predominately base metal contains less than 25 wt% noble metal.
   e. High noble metals contain 40 wt% or greater gold.

Answer: b

134. What is the function of the stylomandibular ligament?
   a. Limits the temporomandibular joint during hinge movement.
   b. Does not have any effect on mandibular movements.
   c. Limits mandibular movement during immediate mandibular lateral translation.
   d. Limits excessive protrusive mandibular movement.

Answer: d

135. Each of the following is considered in the Prosthodontic Diagnostic Index (American College of Prosthodontists) classification of the completely edentulous patient EXCEPT one. Which one is the exception?
   a. Residual ridge morphology of the mandible.
   b. Residual ridge morphology of the maxilla.
   c. Mandibular muscle attachments.
   e. Mandibular bone height.

Answer: a

136. Which of the following is true regarding elastomeric impression materials?
   a. Poly (vinyl siloxane) cannot be immersed in disinfectant due to its imbibition of water.
   b. Polyether cannot be immersed in disinfectant due to its imbibition of water.
   c. Immersion in disinfectant has no effect on the dimensional stability of elastomeric impression materials.

Answer: b

137. Which mineral constituent of modern dental porcelains is responsible for increasing the coefficient of thermal expansion?
   a. Leucite.
   b. Tridymite.
   c. Quartz.
   d. Kemite.
   e. None of the above.

Answer: a

138. The addition of violet stain to a metal ceramic crown with a yellow chroma will:
   a. Reduce chroma and increase value.
   b. Increase chroma and reduce value.
   c. Increase chroma and increase value.
   d. Reduce chroma and reduce value.
   e. Reduce chroma and reduce translucency.

Answer: d

139. Regarding implant overdentures, which of the following statements is true?
   a. There is more marginal bone loss around implant ball overdentures because the implants are not splinted.
   b. There is more marginal bone loss around implant ball overdentures due to rotation of the denture over the ball attachment.
   c. There is more marginal bone loss around implant bar overdentures due to lack of hygiene under the bar.
   d. There is no significant difference in bone loss around implants when comparing ball vs. bar overdentures.

Answer: d

140. Leukoplakia may be a clinical manifestation of all of the following histologic changes of the epithelium EXCEPT one. Which one is the exception?
   a. Hyperplasia.
   b. Dysplasia.
   c. Hyperkeratosis.
   d. Acantholysis.

Answer: d
141. Each of the following is a diagnostic criteria that indicates disc displacement EXCEPT one. Which one is the exception?
   a. Pain precipitated by function.
   b. Pain at rest.
   c. Straight line deviation to the affected side on opening.
   d. Marked limited laterotrusion to the contralateral side.
   e. Marked limited mandibular opening.

Answer: c

142. Which of the following concepts refers to the combination clasp design?
   a. Cast circumferential retentive clasp and a cast reciprocal clasp.
   b. Wrought wire circumferential retentive clasp and a cast reciprocal clasp.
   c. Cast I-bar retentive clasp and a cast reciprocal clasp.
   d. Cast I-bar retentive clasp and a lingual plate reciprocal element.
   e. 20-gauge wrought wire circumferential retentive clasp and no reciprocal element.

Answer: b

143. Which statement below best describes an adverse esthetic consequence that may occur when articulating a definitive cast on a semi-adjustable articulator?
   a. The esthetic reference plane and intercondylar axis may not be parallel.
   b. The incisal edge position of the anterior restorations may be placed too far labially.
   c. Condylar determinants may not be accurately transferred.
   d. The angle of the occlusal plane relative to the intercondylar axis may be negative.

Answer: a

144. Which of the following best describes the anterior display of a patient classified as having a high smile line?
   a. A continuous band of gingival tissue in a full smile.
   b. Greater than 65% of the interproximal papillae in a full smile.
   c. Greater than 65% of the facial surface of each maxillary anterior tooth in a full smile.
   d. Greater than 35% of the facial surface of each maxillary anterior tooth with lips in repose.

Answer: a

145. The difference between a heat-processed silicone-based soft denture liner compared with an autopolymerized silicone based soft denture liner is best summarized by which of the following statements?
   a. The heat-processed and autopolymerized materials have identical initial hardness values.
   b. After 1 week of water sorption, neither type of test specimen change hardness values.
   c. At 6 months the water sorption values for both samples are similar.
   d. Resin solubility for the autopolymerized material is the same as that of the heat-processed material after 6 months.
146. Total occlusal convergence (TOC) is the angle formed between two opposing prepared axial surfaces. What is an appropriate clinical goal for TOC?
   a. 5-7°.
   b. 8-9°.
   c. 10-20°.
   d. 21-25°.

**Answer:** c  

147. According to the ADA specification No. 25, dental gypsum products must reproduce fine detail of what size to be considered satisfactory?
   a. 5μm.
   b. 50μm.
   c. 100μm.
   d. 200μm.

**Answer:** b  

148. Adding vasoconstrictors to local anesthetics will:
   a. Prolong the duration of anesthesia.
   b. Enhance the depth of anesthesia.
   c. Reduce the peak concentration of anesthetic in the blood.
   d. All of the above.

**Answer:** d  

149. Canine guidance and lateral disclusion result in:
   a. An increase in EMG activity of all muscles.
   b. Isotonic muscle contraction of the medial pterygoid muscle.
   c. Increased activity in the anterior temporal muscle during lateral slide from centric occlusion.
   d. A decrease in EMG activity of the temporal and masseter muscles.
   e. No significant effect on the EMG activity of the temporal and masseter muscles.

**Answer:** d  
150. One Sievert is equal to one __________:
   a. Gray
   b. Rem
   c. Joule
   d. Roentgen

   **Answer:** a.