

PRACTICE EXAM 6: CERTIFIED DENTAL TECHNICIAN COMPREHENSIVE SIMULATION (160 QUESTIONS)

This practice exam contains 160 multiple-choice questions. Allow up to 2 hours and 45 minutes, matching the current NBC Comprehensive written-examination time limit. Choose the single best answer for each question. NBC states that minimum passing scores are subject to change and are communicated to candidates; use this simulation for practice and review rather than as an official score prediction.

1. A laboratory receives a prescription that omits the material requested for a fixed restoration. What is the best first action?

- A. Select the material used most often
- B. Proceed with the least expensive alloy
- C. Ask the patient to choose the material
- D. Contact the prescribing dentist for clarification

2. Which practice best supports Good Manufacturing Practice in a dental laboratory?

- A. Relying on each technician's preferred method
- B. Documenting controlled procedures and production records
- C. Discarding records after the case ships
- D. Changing materials without recording the change

3. When a laboratory handles patient information received from a dental office, which approach best protects privacy?

- A. Post the case details where all staff can see them
- B. Use patient information for unrelated training examples
- C. Limit access to information needed for the laboratory task
- D. Send the full record to any outside vendor

4. A technician notices that the requested appliance appears inconsistent with the written prescription. What should the technician do?

- A. Pause fabrication and obtain clarification
- B. Alter the design independently
- C. Complete the case and explain later
- D. Ignore the inconsistency if the model is usable

5. Which item most directly establishes what the laboratory is authorized to fabricate for a specific patient?

- A. The laboratory advertising brochure
- B. The patient's insurance summary
- C. The technician's preferred design checklist
- D. The dentist's work authorization or prescription

6. If state law restricts a laboratory activity, which rule should guide the technician?

- A. The policy of a laboratory in another state
- B. The applicable state dental practice act
- C. A manufacturer's marketing recommendation
- D. A technician's personal interpretation of scope

7. Why is lot or batch traceability useful when a material-related problem is discovered after delivery?

- A. It proves every restoration was clinically successful
- B. It replaces the need for a work authorization
- C. It helps identify which cases may contain the affected material
- D. It eliminates the need to investigate processing

8. In canine-guided occlusion, which teeth primarily disclude the posterior teeth during a lateral excursion?

- A. The central incisors only
- B. The canines on the working side
- C. The nonworking molars
- D. All posterior teeth equally

9. Which description best characterizes group function during a lateral mandibular movement?

- A. Several working-side teeth share the lateral contact
- B. Only the nonworking canine contacts
- C. Both arches separate completely
- D. Only the central incisors contact

10. Which permanent tooth usually has an oblique ridge crossing its occlusal surface?

- A. Maxillary first molar
- B. Mandibular first premolar
- C. Mandibular central incisor
- D. Maxillary canine

11. Which permanent tooth commonly has five major cusps?

- A. Maxillary first premolar
- B. Mandibular second premolar, two-cusp type
- C. Mandibular first molar
- D. Maxillary lateral incisor

12. In the Universal numbering system, which tooth is number 8?

- A. Maxillary left central incisor
- B. Mandibular left central incisor
- C. Mandibular right central incisor
- D. Maxillary right central incisor

13. In the FDI two-digit system, tooth 11 identifies which permanent tooth?

- A. Maxillary left central incisor
- B. Mandibular left central incisor
- C. Maxillary right central incisor
- D. Mandibular right central incisor

14. Which muscle is a primary elevator of the mandible and is readily palpable over the lateral ramus?

- A. Buccinator
- B. Orbicularis oris
- C. Platysma
- D. Masseter

15. Which muscle of mastication has anterior fibers that elevate the mandible and posterior fibers that help retrude it?

- A. Mentalis
- B. Temporalis
- C. Zygomaticus major
- D. Orbicularis oris

16. Which landmark is located at the posterior end of the maxillary residual ridge and is important in complete denture extension?

- A. Maxillary tuberosity
- B. Lingual frenum
- C. Retromolar pad
- D. Mental foramen

17. Which mandibular landmark is routinely covered by a properly extended complete denture base?

- A. Retromolar pad
- B. Incisive papilla
- C. Hamular notch
- D. Fovea palatinae

18. What is the primary function of anterior guidance in natural dentition?

- A. Increase posterior cusp height during closure
- B. Create bilateral nonworking interferences
- C. Prevent all anterior contact in protrusion
- D. Guide mandibular excursions and help disclude posterior teeth

19. Which relationship describes Angle Class I molar occlusion?

- A. The maxillary first molar is a full cusp distal
- B. The mandibular canine contacts the central incisor only
- C. The maxillary first molar mesiobuccal cusp aligns with the mandibular first molar buccal groove
- D. The maxillary incisors have no horizontal overlap

20. Which term describes the horizontal overlap of maxillary anterior teeth over mandibular anterior teeth?

- A. Overbite
- B. Overjet
- C. Curve of Spee
- D. Centric relation

21. Which term describes the vertical overlap of the anterior teeth?

- A. Overjet
- B. Overbite
- C. Freeway space
- D. Bennett movement

22. In fixed prosthodontics, what is a pontic?

- A. The prepared natural tooth supporting a restoration
- B. The removable base supporting denture teeth
- C. The impression coping used for an implant
- D. The artificial tooth replacing a missing tooth in a fixed partial denture

23. What is a die in conventional fixed-restoration laboratory work?

- A. Positive reproduction of a prepared tooth for restoration fabrication
- B. A negative impression of the entire arch
- C. A wax sprue attached before investing
- D. A finished ceramic coping after glazing

24. Which term refers to the direction in which a prosthesis is intended to be inserted and removed?

- A. Curve of Wilson
- B. Centric stop
- C. Path of insertion
- D. Compensating curve

25. Which device is best described as a removable prosthesis replacing all teeth in one arch?

- A. Fixed partial denture
- B. Complete denture
- C. Orthodontic retainer
- D. Custom impression tray

26. Which unit is most appropriate for recording the mass of a small quantity of dental alloy?

- A. Grams
- B. Millimeters
- C. Milliliters
- D. Degrees Celsius

27. What is an abutment tooth in a fixed dental prosthesis?

- A. A tooth replaced by the pontic
- B. A tooth selected only for shade comparison
- C. A tooth removed from the working cast
- D. A tooth that supports or retains the prosthesis

28. What is the principal purpose of a face-bow transfer?

- A. Record the final shade of anterior teeth
- B. Measure polymerization shrinkage of acrylic
- C. Relate the maxillary cast to an approximate hinge-axis reference
- D. Determine the casting temperature of an alloy

29. Which articulator can accept more patient-specific settings than a simple hinge articulator?

- A. Nonadjustable hinge articulator
- B. Vacuum former
- C. Dental surveyor
- D. Semi-adjustable articulator

30. A centric relation record is primarily used to do what in the laboratory?

- A. Relate casts at the recorded jaw position
- B. Choose ceramic fluorescence
- C. Measure framework casting shrinkage
- D. Determine the denture base shade

31. What does the incisal guide table on an articulator influence?

- A. The water-powder ratio of dental stone
- B. The melting range of casting alloy
- C. The path followed by the incisal pin during simulated excursions
- D. The curing depth of light-cured resin

32. Why should a bite registration be trimmed so it does not prevent complete seating of casts?

- A. It increases the ceramic coefficient of expansion
- B. A bulky record can hold casts apart
- C. It changes the alloy composition during casting
- D. It permanently strengthens the gypsum die

33. Which articulator is designed primarily to reproduce simple opening and closing rather than patient-specific excursive movements?

- A. Nonadjustable hinge articulator
- B. Fully adjustable articulator
- C. Semi-adjustable articulator
- D. Pantographic tracing system

34. Which change generally increases the setting expansion of gypsum?

- A. Adding substantially more water
- B. Increasing spatulation within recommended limits
- C. Using a separating medium in the mix
- D. Reducing all crystal interaction

35. What is the usual effect of increasing the water-powder ratio of dental stone beyond the manufacturer recommendation?

- A. Higher strength and lower porosity
- B. No change in working properties
- C. Lower strength and a more porous set cast
- D. Conversion of stone into investment

36. Which gypsum product is commonly selected when high-strength dies are required for fixed restorations?

- A. Impression plaster
- B. Model plaster only
- C. Alginate hydrocolloid
- D. High-strength dental stone

37. Why should wax patterns be invested promptly after completion?

- A. Wax becomes stronger with prolonged storage
- B. Wax can distort as internal stresses relax
- C. Investment cannot contact fresh wax
- D. Long storage eliminates thermal expansion

38. What is the main purpose of a sprue on a cast wax pattern?

- A. Create the final occlusal contact
- B. Prevent all investment expansion
- C. Provide a channel for molten material into the mold
- D. Polish the restoration automatically

39. Which alloy property is most important for resisting permanent deformation under occlusal load?

- A. Color saturation
- B. Thermal conductivity only
- C. Surface gloss
- D. Yield strength

40. Why is an oxide layer important when porcelain is fused to a compatible metal alloy?

- A. It contributes to chemical bonding between metal and porcelain
- B. It guarantees zero thermal mismatch
- C. It eliminates the need for surface preparation
- D. It prevents any firing shrinkage

41. Which polymer is most commonly associated with conventional denture base acrylic resin?

- A. Polyvinyl siloxane
- B. Calcium sulfate hemihydrate
- C. Polymethyl methacrylate
- D. Cobalt chromium

42. During acrylic resin processing, what can excessive residual monomer contribute to?

- A. Greater ceramic translucency
- B. Tissue irritation and reduced material quality
- C. Increased gypsum hardness
- D. Improved alloy passivation

43. What is the primary purpose of a separating medium between gypsum and acrylic resin during denture processing?

- A. Increase the vertical dimension of occlusion
- B. Create chemical union between acrylic and stone
- C. Act as a casting flux
- D. Prevent acrylic from bonding to or penetrating the gypsum surface

44. What is the main function of flux during soldering?

- A. Reduce or dissolve oxides and promote solder flow
- B. Confine solder to a selected area
- C. Increase gypsum setting time
- D. Create a ceramic glaze layer

45. What is the purpose of anti-flux in soldering?

- A. Limit solder flow to unwanted areas
- B. Remove all metal oxides
- C. Increase the melting range of solder
- D. Accelerate gypsum setting

46. Which laboratory alcohol is commonly used as a cleaning or solvent agent and is highly flammable?

- A. Dental stone slurry
- B. Isopropyl alcohol
- C. Distilled water
- D. Silicone putty

47. What is the purpose of a wetting agent applied to a wax pattern before investing?

- A. Increase wax hardness permanently
- B. Prevent burnout of the wax
- C. Raise alloy melting temperature
- D. Reduce surface tension so investment adapts more completely

48. What is the primary action of a wax solvent?

- A. Set gypsum by hydration
- B. Etch zirconia crystals deeply
- C. Dissolve or soften wax residues
- D. Polymerize denture acrylic

49. Which abrasive is often selected for cutting or grinding very hard ceramic materials?

- A. Cotton rag wheel alone
- B. Pumice slurry only
- C. Tin foil separator
- D. Diamond abrasive

50. Why should different polishing abrasives be used in a controlled sequence from coarse to fine?

- A. Fine abrasives create deeper initial scratches
- B. Each step removes scratches from the preceding step
- C. Coarse abrasives always produce final gloss
- D. Sequence has no effect on surface quality

51. Which laboratory gas characteristic requires special attention when oxygen is used near combustible materials?

- A. Oxygen supports combustion
- B. Oxygen is an inert shielding gas
- C. Oxygen extinguishes fuel flames
- D. Oxygen is nonreactive with fire

52. Which investment type is generally preferred for high-fusing base-metal casting alloys?

- A. Gypsum-bonded investment
- B. Alginate impression material
- C. Phosphate-bonded investment
- D. Type II model plaster

53. Why is gypsum-bonded investment generally unsuitable for very high casting temperatures?

- A. The gypsum binder can decompose at excessive heat
- B. It becomes more elastic as temperature rises
- C. It turns into silicone rubber
- D. It eliminates alloy oxidation

54. Which impression material is an addition silicone elastomer?

- A. Alginate
- B. Impression compound
- C. Zinc oxide eugenol paste
- D. Polyvinyl siloxane

55. What is a major advantage of polyvinyl siloxane impressions for laboratory procedures?

- A. They must be poured immediately within seconds
- B. Good dimensional stability when properly handled
- C. They are rigid and cannot flex over undercuts
- D. They dissolve in ordinary gypsum slurry

56. Which ceramic material is commonly used as a high-strength polycrystalline core or monolithic restoration?

- A. Feldspathic porcelain only
- B. PMMA denture base resin
- C. Zirconia
- D. Type IV dental stone

57. Which ceramic is a glass-ceramic commonly selected when translucency and esthetics are important?

- A. Cobalt chromium
- B. Lithium disilicate
- C. High-strength gypsum
- D. Heat-cured PMMA

58. Why must the coefficient of thermal expansion of veneering porcelain be compatible with its substructure?

- A. Mismatch always increases bond strength
- B. Thermal expansion affects only shade
- C. Large mismatch can create damaging residual stresses after firing
- D. Compatibility is unnecessary after glazing

59. What is the primary purpose of die spacer when fabricating many indirect fixed restorations?

- A. Enlarge the external contact area
- B. Replace the finish line on the die
- C. Prevent articulation of the casts
- D. Create controlled internal relief for the luting agent

60. Which cement-related property most directly influences whether a restoration can seat fully over a prepared tooth?

- A. Film thickness
- B. Shade tab number
- C. Investment expansion only
- D. Articulator type

61. When choosing a dental laboratory material, what is the best general approach?

- A. Match material properties to the prescribed indication and processing method
- B. Use one material for every clinical situation
- C. Choose only by package color
- D. Ignore manufacturer processing limits

62. Before accepting an intraoral scan for design, what should the technician check first?

- A. Whether the file has the shortest name
- B. Whether every surface is the same color
- C. Whether critical margins and required anatomy are captured clearly
- D. Whether the dentist used a specific monitor

63. A stone cast contains a positive nodule on an occlusal surface. What is the most likely source?

- A. Excessive die spacer on the cast
- B. An impression void or bubble at that location
- C. A missing sprue reservoir
- D. Overglazing of ceramic

64. Why should an impression be inspected for pulls or tears before pouring a master cast?

- A. Tears improve cast strength
- B. Pulls increase stone hardness
- C. Defects disappear during setting
- D. Defects can reproduce inaccurate margins or anatomy

65. What is a principal reason for using a custom impression tray?

- A. Eliminate the need for any impression material
- B. Increase ceramic firing temperature
- C. Provide controlled, relatively uniform space for impression material
- D. Replace the master cast

66. Why should alginate impressions generally be poured promptly?

- A. They can change dimension through water loss or uptake
- B. They become stronger with prolonged drying
- C. They polymerize into acrylic resin
- D. They cannot contact gypsum immediately

67. When sectioning a removable die, what is the most important objective?

- A. Create a wider finish line
- B. Permit accurate die reseating without margin damage
- C. Change the preparation taper
- D. Eliminate proximal contacts

68. What does a scan-body component help communicate in an implant digital impression?

- A. The patient's tooth shade only
- B. The gypsum water-powder ratio
- C. The acrylic curing cycle
- D. Implant position and orientation to the CAD system

69. Why is a stable base important when articulating digital or physical models?

- A. It increases porcelain translucency
- B. It lowers alloy liquidus temperature
- C. It preserves the recorded relationship without rocking or distortion
- D. It replaces the bite record

70. A master cast shows a missing thin finish-line area because the impression tore. What is the best laboratory response?

- A. Invent the margin from the adjacent tooth
- B. Trim away more of the preparation
- C. Proceed and hide the area with die spacer
- D. Request a corrected impression or scan rather than guessing the margin

71. Under OSHA Hazard Communication, what document should workers be able to access for information about a hazardous chemical?

- A. The patient appointment book
- B. The Safety Data Sheet
- C. The articulator calibration card only
- D. The shade-tab inventory

72. Which item is a required element on many shipped hazardous-chemical labels under OSHA Hazard Communication?

- A. A signal word and applicable hazard pictogram
- B. The patient's prescription number
- C. The technician's certification number
- D. The restoration shade only

73. When should appropriate eye and face protection be used at a grinding station?

- A. Only after an injury occurs
- B. Only when polishing soft wax
- C. Whenever the operation can create flying particles or splash hazards
- D. Only if the case is an implant restoration

74. What is the best engineering-control approach for reducing airborne grinding dust at its source?

- A. Use effective local exhaust or dust collection
- B. Open a case box nearby
- C. Increase hand pressure on the bur
- D. Remove protective guards

75. An employee may be exposed to an injurious corrosive chemical. What emergency provision does OSHA require in the work area?

- A. Only a paper towel dispenser
- B. Quick drenching or flushing facilities for eyes and body
- C. A shade-matching light
- D. A locked cabinet with no immediate access

76. What should be done with an incoming impression or appliance whose disinfection status is uncertain?

- A. Assume it is safe because it arrived packaged
- B. Polish it first to remove contamination
- C. Place it directly on a shared bench
- D. Follow the laboratory infection-control protocol and communicate before routine handling

77. Which information is most useful when selecting gloves for handling a laboratory chemical?

- A. The glove color alone
- B. Chemical compatibility and PPE guidance from SDS or manufacturer
- C. The technician's dominant hand
- D. The case delivery date

78. Why should compressed-gas cylinders be protected from falling or impact?

- A. It improves porcelain shade matching
- B. It prevents gypsum from setting
- C. It increases acrylic working time
- D. Valve damage can create a severe high-pressure release hazard

79. What is the safest response to an unknown chemical spill in the laboratory?

- A. Restrict exposure and follow the product-specific spill procedure in the SDS
- B. Smell the liquid closely to identify it
- C. Mix it with another chemical to neutralize it
- D. Continue working until the end of the shift

80. Why should food and drink be kept away from areas where hazardous laboratory chemicals and contaminated items are handled?

- A. To increase equipment speed
- B. To improve impression accuracy
- C. To reduce the risk of ingestion and cross-contamination
- D. To extend ceramic firing cycles

81. Before layering porcelain on a framework, what should be confirmed first?

- A. The pontic is intentionally unsupported
- B. The die margin is removed
- C. The opposing cast is discarded
- D. The framework design adequately supports the planned ceramic contour

82. Why must a metal-ceramic alloy and veneering porcelain have compatible thermal expansion behavior?

- A. To eliminate all firing shrinkage
- B. To limit residual stress during cooling after firing
- C. To make the alloy transparent
- D. To prevent oxide formation completely

83. What is the primary purpose of opaque porcelain in a conventional metal-ceramic restoration?

- A. Mask metal and support bonding of veneering porcelain
- B. Create the final proximal contact by itself
- C. Increase the die stone strength
- D. Act as a gypsum separator

84. What is the best reason to condense layered dental porcelain properly before firing?

- A. Increase trapped air intentionally
- B. Make the ceramic chemically identical to metal
- C. Reduce excess liquid and improve particle packing
- D. Eliminate the need for firing

85. During ceramic contouring, what should guide development of cusp and ridge anatomy?

- A. The thickest possible ceramic everywhere
- B. Random symmetry between all teeth
- C. The color of the investment
- D. The prescribed tooth morphology and functional occlusion

86. A ceramic crown has a heavy proximal contact on the working cast. What is the most appropriate laboratory action?

- A. Remove the finish line
- B. Open the contact completely
- C. Adjust the contact conservatively and recheck seating
- D. Increase the crown height without reseating

87. What is the purpose of glazing a ceramic restoration after contour and characterization are complete?

- A. Produce the prescribed surface finish and seal superficial texture
- B. Increase the metal coping thickness
- C. Create a new die from the crown
- D. Replace all mechanical polishing

88. When evaluating shade, why is value often considered especially important?

- A. Value describes only surface roughness
- B. Incorrect lightness or darkness is readily noticeable
- C. Value is unrelated to perceived brightness
- D. Value applies only to metal alloys

89. After occlusal adjustment of a zirconia restoration, what finishing step is important?

- A. Leave the rough ground surface unchanged
- B. Etch it with any acid available
- C. Coat it with gypsum slurry
- D. Polish the adjusted zirconia with an appropriate ceramic polishing system

90. Which restoration is most associated with monolithic high-strength zirconia?

- A. A heat-cured acrylic denture base
- B. A full-contour zirconia crown
- C. A gypsum diagnostic cast
- D. A cobalt-chromium clasp only

91. What is a common reason to choose lithium disilicate for an anterior crown?

- A. It is a base-metal casting alloy
- B. It requires no design thickness
- C. It can provide favorable translucency with useful strength
- D. It is used only for denture bases

92. Why should contamination be controlled before final ceramic bonding or layering steps?

- A. Contamination can interfere with wetting, bonding, or surface quality
- B. Contamination always increases bond strength
- C. It makes all ceramics self-glazing
- D. It prevents any thermal contraction

93. Which maxillary landmark helps define the posterior limit of a complete denture and lies between the tuberosity and hamulus?

- A. Retromolar pad
- B. Mental foramen
- C. Hamular notch
- D. Buccal shelf

94. What is the main purpose of the posterior palatal seal area in a maxillary complete denture?

- A. Create a mandibular stress-bearing area
- B. Eliminate all need for border extension
- C. Increase anterior tooth overjet
- D. Maintain posterior border seal and compensate for processing change

95. What quality is essential for a record base used to record jaw relations?

- A. It should be rigid, stable, and accurately adapted
- B. It should rock freely on the cast
- C. It should flex under light pressure
- D. It should cover the teeth of the opposing cast

96. What is the principal purpose of an occlusal rim?

- A. Serve as the final polished denture base
- B. Establish and record jaw relations and guide tooth arrangement
- C. Replace the master cast permanently
- D. Create the posterior palatal seal by itself

97. In a balanced complete-denture setup, what is the goal during eccentric movements?

- A. Create only nonworking interferences
- B. Separate both dentures from the ridges
- C. Eliminate all posterior contacts in every excursion
- D. Maintain planned bilateral contacts that help stabilize the dentures

98. Why are posterior denture teeth generally positioned over or near the residual ridge support zone?

- A. To maximize buccal cantilever forces
- B. To avoid all tongue space
- C. To reduce destabilizing leverage on the denture base
- D. To create an intentionally narrow base

99. What is the purpose of flasking and investing a waxed complete denture?

- A. Create a tooth-position-preserving mold for resin processing
- B. Make a final ceramic glaze
- C. Record a face-bow transfer
- D. Determine implant angulation

100. Why is a laboratory remount performed after processing a complete denture?

- A. To change the prescribed tooth shade
- B. To correct processing-related occlusal discrepancies on an articulator
- C. To make a new impression tray
- D. To increase acrylic polymerization

101. What does selective equilibration of a processed denture aim to accomplish?

- A. Remove all cusp anatomy
- B. Shorten the denture borders
- C. Refine contacts while preserving intended tooth form and relationships
- D. Change the base material

102. Which procedure replaces the entire denture base material while retaining the existing denture teeth?

- A. Rebase
- B. Reline
- C. Repair
- D. Duplicate cast

103. Which procedure adds material to the tissue surface of an existing denture to improve adaptation?

- A. Rebase
- B. Reline
- C. Remount
- D. Divest

104. When polishing a complete denture, which area should be protected from excessive polishing?

- A. Only the cameo surface
- B. Only the facial surfaces of teeth
- C. All acrylic surfaces equally with aggressive pressure
- D. The intaglio tissue surface and critical border anatomy

105. When applying die spacer for a crown, which area is commonly kept free of spacer?

- A. The entire axial wall
- B. All internal surfaces including the margin
- C. The immediate finish-line region
- D. The opposing cast only

106. What feature of a crown preparation is most critical for a technician when defining the restoration margin?

- A. A clearly identifiable continuous finish line
- B. The color of the die stone
- C. The height of the articulator pin only
- D. The shape of the shipping box

107. For a fixed partial denture, what is the primary function of a connector?

- A. Create the impression of the abutment
- B. Join pontic and retainers into one prosthesis
- C. Replace the die spacer
- D. Act as a removable clasp

108. Why should a wax pattern for a crown have smooth continuous margins before investing?

- A. Irregular wax margins reproduce in the final restoration
- B. Investment will automatically repair missing wax
- C. Burnout creates a new finish line
- D. Polishing always restores lost marginal length

109. What is the purpose of a sprue reservoir in a casting system?

- A. Create the final porcelain shade
- B. Support the articulator incisal pin
- C. Reduce the die stone water ratio
- D. Provide a nearby supply of molten alloy during solidification

110. Why must an invested wax pattern undergo burnout before casting?

- A. It permanently hardens the wax
- B. It adds acrylic resin to the mold
- C. It records jaw relation
- D. Eliminate pattern and prepare mold cavity for molten alloy

111. A cast crown does not seat completely on an undamaged die. What should be checked first?

- A. The patient's insurance status
- B. Internal nodules or interferences inside the casting
- C. The color of the investment ring
- D. The laboratory delivery route

112. When adjusting a proximal contact on a crown, what is the safest sequence?

- A. Open the contact widely before seating
- B. Remove the margin to gain space
- C. Confirm complete seating, mark the contact, adjust minimally, and recheck
- D. Adjust the opposing tooth on the cast first

113. What is the main purpose of finishing a cast metal margin carefully?

- A. Make the margin intentionally rounded away from the die
- B. Produce a smooth continuous edge without shortening or opening the margin
- C. Increase the sprue diameter after casting
- D. Change the preparation taper

114. When evaluating occlusion on a fixed restoration, what should be verified?

- A. Centric contacts and prescribed excursive relationships without premature interference
- B. Only the color of the occlusal surface
- C. Only the weight of the casting
- D. Only the die spacer thickness

115. What is a primary reason to use soldering or welding in fixed prosthodontic laboratory work?

- A. Create a gypsum impression
- B. Cure denture acrylic
- C. Join or repair metal components in controlled relationship
- D. Increase ceramic translucency

116. Before final acceptance of a crown, which combination should the technician evaluate?

- A. Only the shade tab selected
- B. Only the weight of the restoration
- C. Only the polishing compound used
- D. Margins, contacts, occlusion, contour, surface finish, and prescription requirements

117. Which Angle classification describes a distal relationship of the mandibular first molar relative to the maxillary first molar?

- A. Class I
- B. Class III
- C. Open bite only
- D. Class II

118. Which Angle classification describes a mesial relationship of the mandibular first molar relative to the maxillary first molar?

- A. Class III
- B. Class I
- C. Class II
- D. Deep overbite only

119. A passive orthodontic appliance is designed primarily to do what?

- A. Apply continuous active force for expansion
- B. Maintain or retain a position without actively moving teeth
- C. Cut a preparation finish line
- D. Replace all teeth in an arch

120. What is the main purpose of an Adams clasp on a removable orthodontic appliance?

- A. Create a ceramic glaze
- B. Measure vertical dimension
- C. Provide mechanical retention on a tooth
- D. Form a casting sprue

121. What is the primary role of a labial bow on many removable orthodontic appliances?

- A. Serve as the acrylic base itself
- B. Replace the posterior teeth
- C. Control or retain anterior teeth with adjustable wire
- D. Act as a dental stone separator

122. What is the purpose of an orthodontic spring incorporated into a removable appliance?

- A. Increase gypsum setting expansion
- B. Create a posterior palatal seal
- C. Polish acrylic automatically
- D. Deliver controlled force to a selected tooth

123. In the sprinkle technique for orthodontic acrylic, how is resin commonly built up?

- A. A ceramic ingot is pressed into a mold
- B. Polymer powder and monomer are alternated directly over the cast area
- C. Metal alloy is cast into investment
- D. Stone and water are mixed into a die

124. What is a key advantage of pressure or vacuum forming for certain orthodontic appliances?

- A. A thermoplastic sheet can closely adapt over a model
- B. It eliminates the need for a model
- C. It converts wire into ceramic
- D. It creates a cast metal framework

125. During orthodontic soldering, what is the purpose of flux?

- A. Prevent all solder from reaching the joint
- B. Promote solder flow by controlling surface oxides
- C. Increase acrylic porosity
- D. Create tooth movement by itself

126. Why should a soldered orthodontic joint be finished and polished after joining?

- A. Increase the wire diameter indefinitely
- B. Eliminate all appliance adjustment
- C. Create a gypsum mold
- D. Remove irregularities and produce a smooth cleansable surface

127. When bending orthodontic wire, why should repeated sharp back-and-forth bends at the same point be avoided?

- A. They can work-harden and fatigue the wire until it fractures
- B. They make every wire more elastic
- C. They permanently soften all alloys
- D. They improve solder flow automatically

128. Before delivering a removable orthodontic appliance, what should the laboratory quality check include?

- A. Only the color of the shipping container
- B. Only the mass of the appliance
- C. Fit on the cast, wire security, acrylic finish, and prescribed design
- D. Only the type of articulator in the lab

129. Which Kennedy classification describes bilateral posterior edentulous areas located behind the remaining natural teeth?

- A. Class II
- B. Class III
- C. Class I
- D. Class IV

130. Which Kennedy classification describes a unilateral posterior distal-extension edentulous area?

- A. Class II
- B. Class I
- C. Class III
- D. Class IV

131. What is the primary function of a major connector in a removable partial denture framework?

- A. Act as the only artificial tooth
- B. Replace the impression material
- C. Serve as a polishing compound
- D. Rigidly unite components across both sides of the arch

132. What is the primary function of an occlusal rest on an abutment tooth?

- A. Create the final acrylic shade
- B. Provide vertical support against tissueward prosthesis movement
- C. Open the clasp permanently
- D. Replace the major connector

133. Which component of an RPD primarily provides direct retention by engaging a tooth undercut?

- A. Minor connector only
- B. Denture base finish line
- C. Occlusal rim
- D. Retentive clasp arm

134. What is the purpose of an indirect retainer in a distal-extension removable partial denture?

- A. Create a casting sprue
- B. Increase acrylic polymerization
- C. Resist rotational lifting of the denture base away from the tissues
- D. Provide the primary tissue stop at the distal end

135. What does a dental surveyor help determine on an RPD cast?

- A. Ceramic firing temperature
- B. Path of insertion, contours, and usable undercuts
- C. Acrylic curing time
- D. Implant torque value

136. Why is blockout applied to selected undercuts before duplicating a cast for an RPD framework?

- A. Prevent locking into unwanted undercuts during duplication
- B. Increase the number of retentive clasps automatically
- C. Make the gypsum chemically flexible
- D. Create the final occlusal anatomy

137. What is the purpose of a refractory cast in a conventional cast-metal RPD workflow?

- A. Serve as the final intraoral denture base
- B. Replace the patient's master impression
- C. Act as a ceramic glaze
- D. Provide a heat-resistant cast for framework pattern fabrication

138. What is the purpose of an altered-cast technique for some distal-extension RPDs?

- A. Eliminate all tooth support
- B. Relate framework to the functional distal-extension ridge form
- C. Convert the framework to an orthodontic appliance
- D. Increase ceramic translucency

139. Why are lattice or mesh areas incorporated into many RPD frameworks?

- A. Provide mechanical retention for the acrylic denture base
- B. Increase ceramic opacity
- C. Serve as the final clasp tip
- D. Replace the major connector

140. During final finishing of an RPD framework, what should be preserved?

- A. All casting nodules regardless of interference
- B. A rough tissue surface for retention
- C. Designed clasp contours, rests, and critical fit surfaces
- D. Sharp edges near soft tissue

141. What does osseointegration describe?

- A. Direct functional connection between living bone and an implant surface
- B. Bonding of acrylic to gypsum
- C. Fusion of porcelain to wax
- D. Retention of a clasp in a tooth undercut

142. What is the purpose of a scan body in a digital implant workflow?

- A. Measure denture-base thickness only
- B. Communicate implant position and orientation to the CAD system
- C. Create the final glaze
- D. Replace the implant fixture in the patient

143. What is the function of an implant impression coping in a conventional impression procedure?

- A. Determine ceramic shade
- B. Polymerize tray resin
- C. Serve as the final prosthetic screw
- D. Transfer implant position to the working cast

144. Why is a verification jig used in some multi-implant cases?

- A. Increase ceramic fluorescence
- B. Determine denture tooth mold
- C. Confirm spatial accuracy among implant analog positions
- D. Measure gypsum setting time

145. Why is passive fit especially important for a rigid multi-implant framework?

- A. Misfit always improves load distribution
- B. A gap is required at every implant
- C. Passive fit affects only shade
- D. Misfit can create strain when screws seat the framework

146. What is the purpose of a bar attachment in an implant overdenture design?

- A. Create a ceramic casting mold
- B. Replace the master cast
- C. Provide connection, support, and retention for the removable prosthesis
- D. Serve only as an impression tray handle

147. When comparing screw-retained and cement-retained implant restorations, which feature is characteristic of screw retention?

- A. Secured by a prosthetic screw through an access channel
- B. Retention depends entirely on luting cement
- C. No implant component is required
- D. The restoration cannot be retrieved

148. What does emergence profile refer to in an implant restoration?

- A. The shape of the investment ring
- B. Restoration contour through the peri-implant soft-tissue transition
- C. The height of a stone base
- D. The color gradient of a shade tab

149. Why may an angled screw-channel solution be considered in some implant restorations?

- A. Relocate screw access while retaining screw retention within limits
- B. To eliminate the implant connection
- C. To make any component universally compatible
- D. To avoid all manufacturer instructions

150. What is the purpose of a soft-tissue gingival mask on an implant master cast?

- A. Increase stone hardness
- B. Reproduce removable peri-implant soft-tissue contours for emergence-profile evaluation
- C. Create the final metal oxide layer
- D. Act as a soldering flux

151. In implant prosthetics, why must components be matched to the correct implant system and connection?

- A. All implant connections are interchangeable
- B. Only component color matters
- C. Any screw can be substituted if it is long enough
- D. Mismatched components may not seat, engage, or transfer load as designed

152. When evaluating occlusion on an implant-supported restoration, what is the laboratory goal?

- A. Create the heaviest possible contact everywhere
- B. Remove all occlusal anatomy
- C. Provide prescribed contacts without premature or excursive interferences
- D. Ignore the opposing cast

153. Which file format is widely used to transfer surface-mesh geometry in dental CAD workflows?

- A. STL
- B. DOCX
- C. MP3
- D. TXT only

154. Before designing a crown from an intraoral scan, what should the technician verify?

- A. The file name is exactly three characters
- B. The scan contains no color variation
- C. The monitor brightness is at maximum
- D. Margins, adjacent contacts, opposing anatomy, and bite data are usable

155. Why is model or scan orientation important at the beginning of CAD design?

- A. It permanently changes the patient anatomy
- B. Establish reference for insertion direction and subsequent design tools
- C. It increases resin polymerization
- D. It determines alloy composition

156. What is the purpose of a tooth library in dental CAD software?

- A. Store only patient billing data
- B. Control furnace gas pressure
- C. Provide editable digital tooth forms for restoration design
- D. Replace all scan information

157. Why must minimum thickness and connector dimensions be respected in a digital restoration design?

- A. Thinner is always stronger
- B. Dimensions affect only the file name
- C. Insufficient dimensions can reduce strength or violate system requirements
- D. Connector size is irrelevant after milling

158. In CAM milling, what does nesting refer to?

- A. Recording the patient's jaw relation
- B. Positioning restorations efficiently within a material blank
- C. Applying ceramic glaze manually
- D. Disinfecting an impression

159. After printing a light-cured dental resin part, why is prescribed post-curing important?

- A. It converts the resin into metal
- B. It replaces cleaning of uncured residue
- C. It makes support removal unnecessary
- D. It completes the material's intended polymerization and final properties

160. Why is sintering required for many milled zirconia restorations produced from presintered blanks?

- A. Firing densifies zirconia to final dimensions and properties
- B. It dissolves the zirconia into wax
- C. It creates an alginate impression
- D. It prevents all dimensional change

Practice Exam 6: Answer Key and Explanations

1. D — The keyed response is best because a technician should clarify an incomplete prescription before fabrication begins. Choosing a material without authorization changes the prescribed case, while the patient is not the laboratory prescriber. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

2. B — The keyed response is best because controlled procedures and traceable records support consistent production and corrective review. Personal habits and undocumented substitutions make it difficult to verify how a device was manufactured. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

3. C — The keyed response is best because access should be limited to information needed for the permitted laboratory purpose. Broad internal display or unrelated disclosure increases unnecessary exposure of protected information. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

4. A — The keyed response is best because clarification preserves the dentist's prescribing authority and prevents an unauthorized design change. Proceeding despite a clear inconsistency can waste materials and create a device that does not match the prescription. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

5. D — The keyed response is best because the work authorization communicates the prescribed device and case-specific requirements. Marketing materials, insurance documents, and internal preferences do not replace the prescribing dentist's instructions. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

6. B — The keyed response is best because scope of practice is governed by the law applicable where the regulated activity occurs. Policies and product literature can inform technique but cannot expand authority granted by state law. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

7. C — The keyed response is best because traceability links a specific material lot to the cases in which it was used. It supports investigation and recall decisions but does not by itself prove clinical outcome or replace other records. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

8. B — The keyed response is best because working-side canine contact guides the excursion and separates posterior teeth. Group function deliberately shares working-side contacts, whereas nonworking posterior contacts are generally undesirable interferences. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

9. A — The keyed response is best because group function distributes lateral guidance among multiple teeth on the working side. It differs from canine guidance, in which the canine is intended to provide the principal lateral guidance. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

10. A — The keyed response is best because maxillary molars characteristically have an oblique ridge joining distobuccal and mesiolingual cusp areas. The other listed teeth have different crown forms and do not display this hallmark maxillary molar feature. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

11. C — The keyed response is best because the mandibular first molar typically has three buccal and two lingual cusps. Premolars and incisors have fewer cusps or no cusps, so they do not match the described morphology. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

12. D — The keyed response is best because Universal numbering proceeds from the maxillary right third molar, making number 8 the maxillary right central incisor. The other central incisors occupy different positions in the Universal sequence. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

13. C — The keyed response is best because the first digit identifies permanent quadrant one and the second digit identifies the central incisor. Changing either digit changes the quadrant or tooth position, so the other central incisors use different codes. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

14. D — The keyed response is best because the masseter is a major muscle of mastication that elevates the mandible. The other muscles contribute to cheek, lip, or superficial neck movement rather than serving as primary jaw elevators. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

15. B — The keyed response is best because the fan-shaped temporalis has fiber directions that support elevation and posterior-fiber retrusion. The distractors are facial-expression muscles and do not perform the described mandibular movements. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

16. A — The keyed response is best because the maxillary tuberosity forms the posterior rounded portion of the maxillary residual ridge. The retromolar pad is mandibular, while the frenum and mental foramen occupy different anatomic regions. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

17. A — The keyed response is best because the retromolar pad is a stable posterior landmark that is normally included within mandibular denture coverage. The other landmarks are associated with the maxillary arch and therefore do not define mandibular posterior extension. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

18. D — The keyed response is best because anterior contacts can guide protrusive and lateral movement while reducing posterior contact during excursions. The alternatives describe effects opposite to functional guidance or introduce interferences rather than controlled disclusion. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

19. C — The keyed response is best because Class I uses the characteristic first-molar relationship between the maxillary mesiobuccal cusp and mandibular buccal groove. The other statements do not define the standard Angle Class I molar relationship. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

20. B — The keyed response is best because overjet is the horizontal anterior relationship measured in the labiolingual direction. Overbite is vertical overlap, while the curve of Spee and centric relation describe different occlusal concepts. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

21. B — The keyed response is best because overbite specifically refers to vertical incisal overlap between opposing anterior teeth. Overjet is horizontal overlap, and the remaining choices describe jaw spacing or mandibular movement rather than incisal overlap. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

22. D — The keyed response is best because a pontic is the suspended replacement tooth portion of a fixed dental prosthesis. An abutment supports the prosthesis, while denture bases and impression copings serve unrelated functions. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

23. A — The keyed response is best because a die reproduces the prepared tooth and provides the working surface for margin and contour development. An impression is negative, a sprue forms a casting pathway, and a coping is part of the final restoration. This distinction supports accurate fabrication, functional results, material integrity, and safe laboratory workflow.

24. C — The keyed response is best because path of insertion describes the planned direction of placement and removal of a prosthesis. The other terms describe occlusal curvature or contact relationships rather than the direction of prosthesis placement. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

25. B — The keyed response is best because a complete denture replaces the entire dentition and associated supporting structures of an edentulous arch. The other devices either replace fewer teeth or serve retention and impression functions rather than complete tooth replacement. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

26. A — The keyed response is best because grams are units of mass and are appropriate for weighing small amounts of laboratory material. Millimeters measure length, milliliters measure volume, and degrees Celsius measure temperature rather than mass. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

27. D — The keyed response is best because an abutment provides support or retention for the fixed prosthesis and its replacement tooth components. The pontic replaces the missing tooth, while shade references and removed cast teeth do not serve as supporting abutments. This distinction supports accurate fabrication, functional results, material integrity, and safe laboratory workflow.

28. C — The keyed response is best because a face-bow transfers the spatial relationship of the maxillary arch to an articulator reference axis. Shade, resin processing, and alloy temperature are unrelated to mounting the maxillary cast on an articulator. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

29. D — The keyed response is best because a semi-adjustable articulator permits settings such as condylar guidance that more closely simulate mandibular movement. A hinge articulator provides limited movement, while a vacuum former and surveyor are not articulators. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

30. A — The keyed response is best because the record preserves a jaw relationship so the casts can be mounted in the corresponding position. It is a mounting record, not a method for selecting color or evaluating casting and acrylic properties. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

31. C — The keyed response is best because the guide table directs the incisal pin and therefore contributes to simulated anterior guidance on the articulator. The other choices concern material processing and are not controlled by articulator guidance components. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

32. B — The keyed response is best because interfering registration material can create an incorrect vertical or positional relationship between the mounted casts. The registration affects mounting accuracy, not ceramic expansion, alloy chemistry, or permanent gypsum strength. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

33. A — The keyed response is best because a simple hinge articulator mainly reproduces rotational opening and closing with minimal individual adjustment. Semi-adjustable and fully adjustable systems are intended to reproduce more complex jaw relationships and movements. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

34. B — The keyed response is best because greater spatulation can increase nuclei of crystallization and setting expansion. Excess water generally weakens the set mass and does not create the same expansion effect. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

35. C — The keyed response is best because excess mixing water leaves more void space after the water evaporates. The result is weaker and more porous gypsum, not a stronger material or a different material class. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

36. D — The keyed response is best because high-strength stone provides the hardness and abrasion resistance desirable for working dies. Impression plaster and alginate serve different purposes, and ordinary plaster is less suitable for durable precision dies. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

37. B — The keyed response is best because dental waxes are thermoplastic and can change shape as residual stresses are released. Prompt investing limits dimensional change; storage does not strengthen the pattern or remove normal investment behavior. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

38. C — The keyed response is best because the sprue forms the pathway through which molten alloy or pressed material reaches the mold cavity. Occlusion, investment expansion, and finishing are controlled by other design and processing steps. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

39. D — The keyed response is best because yield strength indicates the stress level at which permanent deformation begins. Color, gloss, and conductivity may matter clinically but do not directly define resistance to plastic deformation. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

40. A — The keyed response is best because a controlled oxide layer can participate in the metal-ceramic chemical bond. It does not cancel thermal-expansion differences, replace preparation, or prevent normal ceramic firing shrinkage. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

41. C — The keyed response is best because PMMA is the standard acrylic polymer widely used for conventional denture bases. The other choices are an impression elastomer, a gypsum precursor, and a metal alloy rather than denture-base acrylic. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

42. B — The keyed response is best because unreacted monomer can adversely affect biocompatibility and physical properties of acrylic resin. It is unrelated to ceramic optics, gypsum hardness, or metal passivation. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

43. D — The keyed response is best because the separator isolates the gypsum mold from resin and helps produce a cleaner processed surface. It does not change occlusion, promote resin-stone bonding, or perform the chemical role of a metalworking flux. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

44. A — The keyed response is best because flux helps control oxides so molten solder can wet and flow over prepared metal surfaces. Anti-flux confines solder, while gypsum and ceramic processes are unrelated to the soldering role of flux. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

45. A — The keyed response is best because anti-flux creates a barrier that discourages solder from flowing beyond the intended joint. Flux performs oxide control, while melting range and gypsum setting are separate material characteristics. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

46. B — The keyed response is best because isopropyl alcohol is a volatile flammable solvent commonly encountered in laboratory cleaning. Water, stone slurry, and silicone putty do not share its combination of solvent action and flammability. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

47. D — The keyed response is best because a wetting agent improves adaptation by allowing investment slurry to spread over the wax surface. It does not harden wax, stop wax elimination, or alter the alloy melting range. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

48. C — The keyed response is best because a wax solvent is selected to remove or soften wax contamination from appropriate surfaces. Gypsum hydration, ceramic surface treatment, and acrylic polymerization are chemically different processes. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

49. D — The keyed response is best because diamond is extremely hard and is effective for controlled reduction of many dental ceramics. Polishing wheels and pumice are generally less aggressive, while foil separators are not cutting abrasives. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

50. B — The keyed response is best because progressive abrasion replaces deeper scratches with progressively finer ones until the desired finish is achieved. Skipping the sequence can leave scratches; coarse abrasives are for reduction, not final high-gloss finishing. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

51. A — The keyed response is best because oxygen is not itself a fuel but strongly supports combustion and can intensify burning. Treating it as inert or fire-suppressing would create a serious handling error around combustible materials. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

52. C — The keyed response is best because phosphate-bonded investments tolerate the higher temperatures required by many base-metal casting systems. Gypsum-bonded investments are limited at higher temperatures, and the other materials are not casting investments. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

53. A — The keyed response is best because gypsum binders have thermal limits that make them inappropriate for many high-fusing alloy procedures. The material does not become elastomeric, convert to silicone, or prevent oxidation of molten alloy. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

54. D — The keyed response is best because polyvinyl siloxane is an addition-reaction silicone elastomer used for accurate dental impressions. Alginate is a hydrocolloid, impression compound is thermoplastic, and zinc oxide eugenol paste is not an elastomer. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

55. B — The keyed response is best because properly handled polyvinyl siloxane is known for dimensional stability and elastic recovery. The other statements incorrectly describe its handling, flexibility, and interaction with gypsum products. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

56. C — The keyed response is best because zirconia is a high-strength polycrystalline ceramic used for frameworks and monolithic restorations. Feldspathic porcelain is more glassy and less strong, while PMMA and dental stone are not restorative ceramics. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

57. B — The keyed response is best because lithium disilicate combines a glassy ceramic matrix with useful strength and translucency for esthetic restorations. The distractors are metal, gypsum, and acrylic materials with very different indications and optical behavior. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

58. C — The keyed response is best because thermal compatibility helps control residual stress as the metal or ceramic and veneer cool together. Excess mismatch can promote cracking or delamination rather than improving bond strength or merely changing shade. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

59. D — The keyed response is best because die spacer produces a planned internal space that can accommodate the cement or luting material. It should not obscure margins, change proximal contact design, or interfere with cast mounting. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

60. A — The keyed response is best because excessive cement film thickness can prevent complete seating and alter marginal adaptation. Shade selection, investment behavior, and articulator design do not directly determine the thickness of the luting film. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

61. A — The keyed response is best because successful fabrication depends on matching material properties, design requirements, and validated processing procedures. Universal material selection or ignoring processing limits increases the risk of distortion, failure, or incompatibility. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

62. C — The keyed response is best because design accuracy depends on complete usable capture of the surfaces needed for the restoration. File naming and display preferences do not compensate for missing margins or incomplete anatomy. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

63. B — The keyed response is best because a void in the negative impression becomes a positive projection when the cast is poured. The other processes occur later and cannot create a stone nodule during impression pouring. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

64. D — The keyed response is best because the cast can only reproduce the shape actually recorded in the impression. Impression defects are transferred into the working model rather than being corrected by gypsum setting. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

65. C — The keyed response is best because a well-designed custom tray supports controlled material thickness and proper extension for the intended impression. It does not eliminate impression material, alter ceramic processing, or substitute for the resulting working cast. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

66. A — The keyed response is best because alginate hydrocolloid can change dimensions through syneresis or imbibition when storage is prolonged or improper. Prompt pouring reduces this risk; drying does not strengthen the impression or convert it into another material. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

67. B — The keyed response is best because the die must be removable for access yet return precisely to its original position on the cast. Sectioning should preserve preparation geometry and contact relationships rather than intentionally altering them. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

68. D — The keyed response is best because scan bodies provide known geometry that lets software register implant location and rotational orientation. Shade, gypsum mixing, and acrylic polymerization are unrelated to the spatial information encoded by a scan body. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

69. C — The keyed response is best because a stable model base prevents movement that would compromise mounting and evaluation of occlusal relationships. It supports the record but does not change material optics, alloy melting behavior, or eliminate the need for jaw-relation data. This distinction supports accurate fabrication, functional results, material integrity, and safe laboratory workflow.

70. D — The keyed response is best because an unrecorded margin cannot be reproduced reliably from an incomplete impression. Guessing or altering the die creates unsupported geometry and risks a restoration that does not fit the clinical preparation. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

71. B — The keyed response is best because the Safety Data Sheet communicates standardized hazard, handling, exposure, and emergency information for the chemical. Administrative dental records and equipment cards do not replace chemical hazard information. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

72. A — The keyed response is best because Hazard Communication labels use standardized elements such as signal words, pictograms, hazard statements, and precautionary statements. Case identifiers and restoration details are not substitutes for required chemical hazard communication. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

73. C — The keyed response is best because PPE selection should be based on the hazard created by the task rather than the type of dental case. Waiting for an injury or tying protection to a prosthesis category fails to control foreseeable exposure. This distinction supports accurate fabrication, functional results, material integrity, and safe laboratory workflow.

74. A — The keyed response is best because source capture removes particulate near the point of generation before it spreads through the work area. The alternatives do not control airborne dust and may increase exposure or mechanical risk. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

75. B — The keyed response is best because OSHA requires immediate flushing capability where eyes or body may be exposed to injurious corrosive materials. Routine supplies and inaccessible storage do not provide the emergency decontamination function required for corrosive exposure. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

76. D — The keyed response is best because uncertain decontamination status should trigger controlled handling and communication rather than an assumption of safety. Polishing or shared-bench placement can spread contamination before an appropriate cleaning and disinfection process occurs. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

77. B — The keyed response is best because glove material must be compatible with the specific chemical and exposure conditions. Color, handedness, and scheduling do not determine chemical permeation or the protective performance required for the task. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

78. D — The keyed response is best because a damaged cylinder or valve can release stored energy violently and create major injury or fire risks. The handling requirement concerns physical and chemical safety, not ceramic color or dental material setting reactions. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

79. A — The keyed response is best because spill response should be based on identified hazards, trained procedures, and the chemical's safety information. Direct smelling, improvised mixing, or delaying response can increase exposure and may create additional reactions. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

80. C — The keyed response is best because separating eating from contaminated or chemical work areas reduces transfer of hazardous substances to the mouth. The restriction is an exposure-control measure and has no beneficial effect on equipment speed or restorative processing. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

81. D — The keyed response is best because proper framework support limits unsupported porcelain and helps maintain contour and strength. Removing essential support or records increases risk of fracture and inaccurate morphology. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

82. B — The keyed response is best because compatible thermal behavior reduces stress that could crack or debond the veneering ceramic. Compatibility does not remove normal shrinkage, change metal opacity, or eliminate every oxide reaction. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

83. A — The keyed response is best because opaque porcelain hides the metal substrate and forms the initial ceramic layer over the prepared surface. Final contour and contact require later ceramic development, and gypsum processes are unrelated. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

84. C — The keyed response is best because condensation improves particle packing and removes excess liquid before sintering. Poor condensation can increase porosity; it does not transform ceramic into metal or replace the firing process. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

85. D — The keyed response is best because ceramic anatomy should reproduce tooth form while respecting contacts, excursions, and available space. Excess bulk or arbitrary contour can compromise function and does not follow restorative anatomy. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

86. C — The keyed response is best because contact adjustment should preserve proper seating while producing a controlled proximal relationship. Removing margins, over-opening contact, or changing height ignores the cause and can create new defects. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

87. A — The keyed response is best because glazing develops the final ceramic surface character and can smooth superficial irregularities. It does not alter coping thickness or create a die, and adjusted ceramic may still require appropriate polishing. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

88. B — The keyed response is best because value expresses relative lightness and darkness and strongly influences whether a restoration appears visually integrated. It is an optical property, not a measure of roughness or a metal-only characteristic. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

89. D — The keyed response is best because polishing reduces roughness created by grinding and helps produce a smoother antagonist-facing surface. Leaving coarse scratches or using unrelated chemicals and gypsum does not provide controlled ceramic finishing. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

90. B — The keyed response is best because monolithic zirconia is commonly milled as the full contour of a fixed restoration. The other choices are polymer, gypsum, or metal structures rather than zirconia restorations. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

91. C — The keyed response is best because lithium disilicate is an esthetic glass-ceramic with optical properties useful in visible areas. It remains a ceramic with design requirements and is not a metal alloy or denture-base resin. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

92. A — The keyed response is best because clean controlled surfaces are needed for predictable interaction between ceramic layers, primers, or bonding interfaces. Foreign residues can create defects rather than improving bonding or canceling normal thermal behavior. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

93. C — The keyed response is best because the hamular notch is a key maxillary posterior landmark used in defining posterior denture extension. The other landmarks are mandibular and do not mark the maxillary posterior border. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

94. D — The keyed response is best because the posterior palatal seal supports retention and compensates for minor processing change at the posterior border. It is a maxillary border feature and does not replace correct extension or determine anterior tooth position. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

95. A — The keyed response is best because a stable record base preserves the accuracy of occlusal rims and jaw-relation records. Rocking or flexing introduces movement and error instead of providing a reliable foundation for recording relationships. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

96. B — The keyed response is best because occlusal rims provide adjustable reference surfaces for vertical dimension, lip support, and jaw-relation records. They are provisional recording components rather than the final base, cast, or sole source of the palatal seal. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

97. D — The keyed response is best because balanced articulation uses coordinated contacts to reduce tipping forces on complete dentures during excursions. Uncontrolled interferences or complete separation would reduce stability rather than support it. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

98. C — The keyed response is best because placing occlusal forces near supporting tissues limits tipping moments and improves denture stability. Excessive buccal placement creates leverage and can compromise both tongue space and functional control. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

99. A — The keyed response is best because flasking surrounds the waxed denture so wax can be eliminated and replaced with denture-base resin. The procedure belongs to denture processing, not ceramic finishing, articulation records, or implant planning. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

100. B — The keyed response is best because processing can alter tooth position slightly, and remounting permits controlled occlusal correction outside the mouth. It addresses occlusion rather than shade selection, tray fabrication, or resin cure chemistry. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

101. C — The keyed response is best because selective grinding corrects premature contacts in a planned sequence while maintaining functional anatomy. Random removal of cusps or borders would damage the prosthesis and does not address the intended occlusal discrepancy. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

102. A — The keyed response is best because rebasing replaces most or all of the old denture-base material while preserving the tooth arrangement. Relining resurfaces the tissue side, repair restores a defect, and duplicating a cast is not a denture-base replacement. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

103. B — The keyed response is best because relining resurfaces the intaglio side to improve adaptation to changed supporting tissues. Rebasing replaces the base more extensively, while remounting and divesting are different laboratory procedures. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

104. D — The keyed response is best because overpolishing the tissue surface or borders can alter fit and extension established by the impression. Polishing should improve exposed surfaces without changing the areas responsible for adaptation and peripheral seal. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

105. C — The keyed response is best because keeping spacer short of the margin helps preserve accurate marginal adaptation while providing internal cement space. Covering the finish line can obscure the margin and compromise the intended seating relationship. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

106. A — The keyed response is best because a clear continuous finish line establishes where the restoration should terminate on the preparation. Unrelated laboratory details cannot compensate for an indistinct or damaged margin. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

107. B — The keyed response is best because connectors unite the components of a fixed dental prosthesis and transmit functional load between units. They are structural components, not impression materials, spacers, or removable-partial-denture retainers. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

108. A — The keyed response is best because the mold reproduces the wax pattern, so defects at the margin are carried into the restoration. Later processing cannot reliably recreate material that was absent or distorted in the original pattern. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

109. D — The keyed response is best because a reservoir can feed molten metal to the restoration as shrinkage occurs during solidification. It is part of casting design and does not control shade, articulation, or gypsum mixing. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

110. D — The keyed response is best because burnout removes wax and conditions the investment mold for the selected casting procedure. The process destroys rather than hardens the wax and is unrelated to resin processing or articulation records. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

111. B — The keyed response is best because small internal positive defects can prevent complete seating even when the die and margin are intact. Administrative and cosmetic details do not explain a mechanical seating interference. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

112. C — The keyed response is best because contact evaluation is meaningful only after the restoration is fully seated on an accurate die. Minimal localized adjustment preserves contour, while broad or unrelated grinding risks creating new fit errors. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

113. B — The keyed response is best because careful finishing removes irregularities while preserving the designed marginal extent and adaptation. Overgrinding can shorten or distort the margin and cannot be corrected by changing other preparation features. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

114. A — The keyed response is best because functional evaluation includes closure contacts and the way the restoration behaves during mandibular excursions. Color, mass, and spacer thickness alone cannot determine whether occlusion is harmonious. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

115. C — The keyed response is best because joining procedures can connect metal segments or correct certain framework relationships without remaking every component. They are metalworking techniques and do not perform impression, acrylic polymerization, or optical functions. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

116. D — The keyed response is best because final quality control requires checking the restoration as a complete functional and prescribed device. A single cosmetic or processing detail cannot establish overall acceptability of fit, form, function, and finish. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

117. D — The keyed response is best because Angle Class II reflects a distal position of the mandibular molar relationship compared with Class I. Class III is mesial, while open bite describes a vertical relationship rather than the molar classification. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

118. A — The keyed response is best because Angle Class III reflects a mesial mandibular molar relationship compared with the Class I reference. Class II is distal, and deep overbite is a vertical incisal relationship rather than an Angle molar class. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

119. B — The keyed response is best because passive appliances generally retain, protect, or maintain an established position rather than generate active tooth movement. Active devices deliver force, while restorative and denture procedures are unrelated. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

120. C — The keyed response is best because the Adams clasp engages tooth undercuts and is widely used to retain removable orthodontic appliances. It is a wire retention component and does not perform ceramic, jaw-record, or casting functions. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

121. C — The keyed response is best because a labial bow is a wire component positioned across the anterior teeth for retention or controlled adjustment. Acrylic bases, artificial teeth, and separating media perform different functions. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

122. D — The keyed response is best because springs are active wire elements designed to apply force in a planned direction when activated. They are not gypsum, denture-border, or polishing components. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

123. B — The keyed response is best because the sprinkle method incrementally applies polymer and monomer to form the appliance base. The other procedures describe ceramic pressing, metal casting, and gypsum model fabrication. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

124. A — The keyed response is best because heated thermoplastic sheets can be adapted over a cast to produce retainers, splints, and similar appliances. The process still relies on a model and does not fabricate wire or cast metal frameworks. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

125. B — The keyed response is best because flux prepares the metal surface so solder can wet and flow through the intended joint. Anti-flux limits flow, while acrylic porosity and orthodontic force are unrelated to the soldering chemistry. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

126. D — The keyed response is best because finishing removes excess solder and roughness that could irritate tissues or retain debris. The goal is controlled surface quality, not unlimited bulk, loss of adjustability, or mold fabrication. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

127. A — The keyed response is best because cyclic deformation at one location can concentrate stress and reduce remaining fatigue life. Repeated bending does not universally increase elasticity or improve soldering behavior. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

128. C — The keyed response is best because final inspection should confirm that the appliance matches the prescription and has smooth, secure, accurately adapted components. Unrelated administrative or equipment details cannot establish whether the appliance itself is safe and correctly fabricated. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

129. C — The keyed response is best because Kennedy Class I has bilateral distal-extension edentulous areas posterior to the remaining teeth. Class II is unilateral distal extension, while Classes III and IV are bounded or anterior patterns. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

130. A — The keyed response is best because Kennedy Class II has a single distal-extension area on one side of the arch. Class I is bilateral, whereas Classes III and IV do not describe a unilateral distal-extension pattern. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

131. D — The keyed response is best because the major connector provides cross-arch unity and distributes forces among framework components. Artificial teeth, impression materials, and polishing compounds serve different roles and cannot substitute for framework rigidity. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

132. B — The keyed response is best because a properly prepared rest directs support to the abutment and helps control vertical position of the framework. It does not determine acrylic color, permanently deform the clasp, or replace cross-arch connection. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

133. D — The keyed response is best because a retentive clasp arm flexes over the height of contour and engages a planned undercut. Minor connectors and finish lines provide structural transitions, while an occlusal rim is not a direct retainer. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

134. C — The keyed response is best because an indirect retainer is positioned to oppose rotation of the distal-extension base around the fulcrum line. It controls lifting rather than performing casting or resin-processing functions. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

135. B — The keyed response is best because surveying analyzes tooth and cast contours relative to a selected path of insertion. The instrument supports RPD design and does not establish unrelated ceramic, resin, or implant parameters. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

136. A — The keyed response is best because blockout eliminates selected undesirable undercuts while preserving those needed for the planned framework design. It controls cast geometry rather than material chemistry or final tooth morphology. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

137. D — The keyed response is best because the refractory cast reproduces the designed arch in a material that tolerates framework fabrication procedures. It is an intermediate laboratory form, not the finished base, original impression, or ceramic surface treatment. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

138. B — The keyed response is best because the altered cast combines the fitted framework with a new impression of distal-extension supporting tissues. It refines support rather than removing tooth support or changing the prosthesis into another device type. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

139. A — The keyed response is best because open framework retention permits processed acrylic resin to lock mechanically to the metal framework. It is designed for base attachment, not ceramic optics, clasp function, or cross-arch connection. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

140. C — The keyed response is best because finishing should remove casting irregularities without changing carefully designed retentive, supportive, or fitting components. Aggressive alteration can weaken the design, distort fit, or leave surfaces that irritate tissues. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

141. A — The keyed response is best because osseointegration refers to stable bone contact with the implant surface that supports load transfer. The other choices describe unrelated laboratory material or prosthesis-retention mechanisms. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

142. B — The keyed response is best because known scan-body geometry allows software to register the implant connection within the digital model. It is a positional reference and does not perform finishing or replace the intraoral implant. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

143. D — The keyed response is best because the coping records the spatial relationship of the implant connection for reproduction in the master cast. Shade, resin polymerization, and final screw retention are separate steps and components. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

144. C — The keyed response is best because a rigid verification index helps detect discrepancies before a definitive bar or framework is completed. It is an accuracy check for implant relationships, not an optical, tooth-selection, or gypsum-timing tool. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

145. D — The keyed response is best because a rigid misfitting framework can generate stress in screws, components, and supporting structures when tightened. Passive fit concerns mechanical adaptation and is not improved by intentional gaps or evaluated by color. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

146. C — The keyed response is best because an implant bar splints selected implants and provides a designed attachment interface for the removable prosthesis. It is a prosthetic framework component rather than an impression or casting accessory. Recognizing this distinction helps protect accuracy, function, material performance, and safe laboratory workflow through fabrication and final quality control.

147. A — The keyed response is best because screw-retained restorations use a mechanical screw connection and include planned access to that screw. Cement-retained designs rely on luting agents, while implant restorations still require compatible components and may be retrievable. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

148. B — The keyed response is best because emergence profile describes the cervical contour that supports and exits the peri-implant soft-tissue zone. It is a prosthetic contour concept rather than a casting, model-base, or shade-guide feature. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

149. A — The keyed response is best because angled-channel components can redirect screw access when the restorative trajectory would otherwise emerge undesirably. They remain system-specific and do not remove compatibility or manufacturer requirements. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

150. B — The keyed response is best because a resilient gingival mask lets the technician inspect and shape cervical contours around implant components. It simulates tissue rather than altering gypsum strength, metal oxidation, or soldering chemistry. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

151. D — The keyed response is best because implant components are engineered around specific connection geometry, dimensions, and screw interfaces. Visual similarity does not guarantee compatibility, and improvised substitutions can compromise fit or mechanical integrity. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

152. C — The keyed response is best because occlusal morphology should follow the prescription and distribute contacts without introducing avoidable high spots or interferences. Excessive contact, flattened anatomy, or failure to evaluate the opposing arch undermines functional quality control. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

153. A — The keyed response is best because STL is a common mesh format used to exchange three-dimensional surface geometry between dental systems. Document, audio, and plain-text formats do not normally contain the triangulated model geometry required for CAD fabrication. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

154. D — The keyed response is best because design depends on complete clinically relevant scan data and an accurate interarch relationship. Cosmetic file naming or display settings cannot replace missing margins, contacts, or occlusal information. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

155. B — The keyed response is best because correct orientation helps software tools evaluate axes, undercuts, and the intended relationship of the restoration to the arch. Orientation is a design reference and does not alter material chemistry or the underlying recorded anatomy. This distinction supports accurate fabrication, functional results, material integrity, and safe laboratory workflow.

156. C — The keyed response is best because a tooth library supplies standardized anatomical starting forms that can be adapted to the individual case. It assists design but does not manage unrelated finances, equipment pressure, or replace the patient-specific scan. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

157. C — The keyed response is best because digital design parameters are linked to the mechanical behavior and manufacturability of the selected material. Ignoring them can create weak or unmillable geometry rather than improving strength. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

158. B — The keyed response is best because nesting arranges digital parts in a disk or block while accounting for geometry, tools, and available material. It is a manufacturing-layout step rather than a clinical record, finishing, or infection-control procedure. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.

159. D — The keyed response is best because post-curing supplies additional controlled light energy needed for the printed resin to reach intended properties. It does not change material class or eliminate required cleaning and support-removal procedures. Recognizing this distinction helps the technician protect dimensional accuracy, functional relationships, material performance, and safe workflow through fabrication, adjustment, and final quality control.

160. A — The keyed response is best because presintered zirconia is milled in an enlarged softer state and then densified according to a controlled firing program. Sintering is expected to produce calibrated shrinkage and does not convert zirconia into unrelated materials. This distinction helps protect accuracy, function, material performance, and safe laboratory workflow during fabrication and final quality control.