

Dental Materials

46: The structure of Dicor, a castable glass ceramic. is essentially composed of

1. crystalline mica particles
2. microscopic silica particles
3. interlocking apatite crystals
4. microcrystalline quartz particles

Ans: 1

47: Strength in gypsum investments is provided by

1. quartz
2. dental stone
3. Indymile and cristobalite together
4. silica
5. Borax

Ans: 2

48: Internal porosity is most likely to occur in which portion of a denture?

1. On the surface
2. In those portions located near the flask periphery
3. In the centre of a thick portion
4. In the portions having less thickness of resin

Ans: 3

49: Invariant transformation is a property of

1. eutectic and peritectic alloys and solid solutions
2. peritectic alloys only
3. eutectic alloys only
4. eutectic and peritectic alloys
5. solid solutions only

Ans: 4

50: The chemical used as a catalyst for the cross-linking of addition silicones is

1. sulfinic acid
- 2 copper Oxide

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- 3: platinum salt
- 4. titanium dioxide
- 5. palladium salt

Ans: 3

51: Compared to the unfilled direct-filling resins cured by the benzoyl peroxide-tertiary amine system, those cured by the sulfinate system, have

- 1:poor color stability and are more sensitive to inhibition by O₂
- 2. poor color stability and are less sensitive to inhibition by O₂
- 3. better color stability and we more sensitive to inhibition by O₂
- 4. better co/or stability and are less sensitive to inhibition by O₂

Ans: 4

52: Which of the following is a thermo-plastic material?

- 1: Impression compound
- 2:. Acrylic resin
- 3. Dental porcelain
- 4. Plaster
- 5. Zinc oxide - eugenol paste

Ans: 1

53: The safest method of removal of the compound impression from the stone cast is, to immerse it in

- 1. warm water
- 2. cold water
- 3. water at mouth temperature
- 4. boiling water

Ans: 1

54: The setting expansion of gypsum bonded investments is approximately

- 1. less than 0.1%
- 2. 0.1% to 0.5%
- 3. 0.5% to 1.5%
- 4. 1.1% to 3.5%
- 5. 1.0% to 10%

Ans: 2

55: Repeated stressing of agar gel will

1. increase its stiffness
2. make it more brittle
3. increase the likelihood of fracture
4. all of the above

Ans: 4

56: Which of the following substances is often added to reversible hydrocolloids to increase strength and viscosity?

- 1: 2% potassium sulfate
2. Borax
- 3- Glutaraldehyde
4. Thymol
5. Glycol

Ans: 2

57: Alteration of the base paste - catalyst paste ratio is not an effective method of altering the curing rate of polysulphide materials, primarily because

1. the alteration is totally unpredictable
2. this is not economical as a portion of paste will be unused
3. this does not alter the setting time
4. the mechanical properties are adversely affected

Ans: 4

58: Amongst the following alloy forming elements, the highest melting point of 3700°C is of

- 1 carbon
2. zinc
3. antimony
4. Cobalt

Ans: 1

59: Stainless steel can be stabilized by the addition of

- 1: Titanium
- 2: Carbon
- 3: Cobalt
- 4: Lead

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Ans: 1

60: Which of the following designates the finest abrasive?

- 1: 0
- 2: 00
- 3: 000
- 4: 0000

Ans: 4

61: When curing dentures, before Packing resin in the mold, the mold surface must be coated with a separating agent, so that

- 1. trial packing can be accomplished
- 2. deflasking is done easily
- 3. the dissolved polymer and free monomer are prevented from soaking into the mold surface
- 4. rising steam from the water in gypsum does not affect the polymerization of resin

Ans: 3

62: The following common metals used in dentistry, the lowest melting point of 960°C is of

- 1. platinum
- 2. chromium
- 3. cobalt
- 4. palladium
- 5. Silver

Ans: 5

63: The main ingredient of inlay casting wax is

- 1. dammar resin
- 2. guttapercha
- 3. carnauba wax
- 4. paraffin wax
- 5. candelilla wax

Ans: 4

64: Which of the following is a disadvantage of electroformed dies?

- 1. They have low strength
- 2. They have poor detail reproduction

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3. They have poor abrasion resistance
4. They require long time for fabrication
5. None of the above

Ans: 4

65: An Increase in which of the following would result in increased localised shrinkage porosity of a casting?

1. Sprue length
2. Melt temperature
3. Mold temperature
4. Sprue thickness

Ans: 1

66: The effectiveness of cement thermal insulating bases under restorations depends primarily on their

1. pH
2. composition
3. setting reaction
4. Thickness

Ans: 4

67: Nickel when added to base metal alloys, increases its

1. strength
2. hardness and fusion temperature
3. modulus of elasticity
4. Ductility

Ans: 4

68: An example of a resin polymerizing by condensation reaction is

1. Bakelite
2. epoxy resins
3. poly (methyl methacrylate)
4. Polycarbonate

Ans: 1

69: The activating compounds for visible light cured resins are, usually

1. peroxide and quinolines
2. camphoroquinone and biacetyl
3. aromatic amines and methyl meth-acrylate
4. biacetyl and quinolines
5. aromatic amines and camphoroquinone

Ans: 2

70: Marginal breakdown of a dental amal-gam restoration is usually related to its

1. creep rate
2. tensile strength
3. coefficient of thermal expansion
4. Malleability

Ans: 1

71: When casting noble metal alloys, which of the following shrinkages is not of any consequence

1. Thermal contraction of the metal which occurs when it cools down to room temperature
2. Thermal contraction of the liquid metal between the temperature to which it is heated and the liquidus temperature
3. The contraction of the metal inherent in its change from the liquid in solid state
4. All of the above

Ans: 2

72: Which of the following is true regarding the synthetic resins?

1. The physical properties of a polymer are not affected by temperature
2. Complex side chains in the monomer molecule generally produce a strong resin
3. Cross-linking of a polymer does not affect its strength
4. The lower the molecular weight of the polymer, the lower will be its softening temperature
5. None of the above

Ans: 4

73: Light cured composite resins are superior to other resin systems, as

1. the dentist has complete control over the working time
2. these resins have high strength

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3. these resins have no polymerization shrinkage
4. these resins have superior esthetics

Ans: 1

74: Dental amalgam alloys are predominantly

1. silver and tin
2. tin and copper
3. copper and zinc
4. zinc and silver

Ans: 1

75: Model cement is commonly known as

1. zinc phosphate cement
2. inlay casting wax
3. corrective wax
4. sticky wax
5. boxing wax

Ans: 4

76: All of the following may be used as retarders of gypsum setting time, except

1. calcium citrate
2. potassium borate
3. dried blood
4. syngenite
5. none of the above

Ans: 4

77: A chemical substance which can act as a retarder in plaster is

1. 5% sodium sulfate
2. potassium tartarate
3. potassium sulfate
4. potassium acetate
5. sodium chloride

Ans: 4

78: The advantage of self-cured resins over heat cured resins for the repair of acrylic resin dentures is

1. warpage of the denture is less likely
2. higher strength
3. repair can be safely carried out inside the mouth
4. Less rapid increase in creep rate with

Ans: 1

79: Which of the following substances has the least wettability ?

1. Teflon
2. Gold
3. Gypsum
4. Wood
5. Amalgam

Ans: 1

80: An example of a condensation polymerization resin is

1. Vulcanite
2. Bakelite
3. cyanoacrylate
4. Vinyl

Ans: 2

81: The setting reaction of plaster is based on

1. flocculation
2. precipitation
3. coagulation
4. gelation
5. Induction

Ans: 2

82: A material similar to the zinc oxide-eugenol reaction product can be formed if zinc oxide is reacted with

1. carboxylic acid
2. methyl guaiacol

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- 3. ortho ethoxybenzoic acid
- 4. any of the above

Ans: 4

83: All of the following statements are true for poly methyl methacrylate resins, except that, it

- 1. will soften at 125°C
- 2. exhibits a tendency to take up water
- 3. is chemically stable to heat
- 4. can be molded as a thermoplastic material at room temperature
- 5. is soluble in acetone

Ans: 4

84: When casting gold alloys, vacuum investing of the wax pattern, results in

- 1. smoother castings
- 2. decreased porosity of the investment
- 3. better detail reproduction
- 4. all of the above
- 5. none of the above

Ans: 4

85: Which of the following cement mixes, prepared with the correct P/L ratio, would appear to be most viscous?

- 1. Zinc oxide-EBA
- 2. Zinc phosphate
- 3. Glass ionomer
- 4. Silicophosphate
- 5. Polycarboxylate

Ans: 5

86: The amount of chromium in stainless steel should be more than

- 1. 52%
- 2. 2.5%
- 3. 38%
- 4. 11%

Ans: 4

87: Direct filling gold offers all of the following advantages for its use in restorative dentistry, except

1. resistance to abrasion
2. resistance to corrosion
3. high thermal conductivity
4. malleability and ductility
5. cohesion at room temperature

Ans: 3

88: Loss of water by evaporation from the surface of a hydrocolloid gel, is termed

1. imbibition
2. memory
3. hysteresis
4. syneresis
5. Diapedesis

Ans: 4

89: The principal deterrent to the use of synthetic resins as restorative materials, is their

1. complicated manipulation technique
2. opacity
3. technique sensitivity
4. high water solubility
5. poor dimensional stability

Ans: 5

90: Trituration is the process of

1. tightly packing the cavity with amalgam
2. squeezing out mercury from the amalgam mix
3. mixing an amalgam alloy with mercury
4. powdering the amalgam alloy

Ans: 3

91: Type V dental stone has

1. high strength, high expansion
2. high strength. low expansion

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- 3. low strength, low expansion
- 4. low strength, high expansion

Ans:1

92: Which of the following statements is incorrect regarding the putty silicones?

- 1. They have very low viscosity
- 2. They are highly filled
- 3. They are usually used as tray material
- 4. All of the above
- 5. None of the above

Ans: 1

93: Polymers utilizing chemical activation to generate free radicals from benzoyl peroxide are known as

- 1. cross-linked polymers
- 2. condensation polymers
- 3. polymerization polymers
- 4. self-curing polymers
- 5. plasticized polymers

Ans: 4

94: Which of the following is the most important mechanical property when a base metal cast partial denture clasp is adjusted?

- 1. Elastic limit
- 2. Compressive strength
- 3. Elongation
- 4 Tensile strength
- 5. Hardness

Ans: 3

95: Heating a gypsum cast above 90°C will

- 1. increase its strength
- 2. remove the water of crystallization
- 3. liberate sulfur dioxide gas
- 4. eliminate excess gauging water
- 5: cause expansion

Ans: 2

96: The temperature dependent distortion in an impression compound arising from the relief of stresses, is known as

1. permanent deformation
2. relaxation
3. slack
4. creep
5. Slump

Ans: 2

97: With regard to reversible hydrocollolds, hysteresis is the

1. lag between the gelation and the liquefaction temperature
2. difference between Syneresis and imbibition
3. difference in dimensional change which occurs before and after gelation
4. release of stresses due to memory phenomenon

Ans: 1

98: The normal setting expansion sum investments is

- 1: 0.5%
- 2: 0.1%
- 3: 1.5%
- 4: 1.2%

Ans: 1

99: The strength and stiffness of poly (methyl methacrylate) resin dentures will be more?

1. following water sorption
2. after finishing and polishing, because the release of processing stresses
3. in the bulkier portions of the denture
4. all of the above
5. none of the above

Ans: 3

100: A metal which is liquid at room temperature is

1. hydrogen
2. helium
3. Iridium

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- 4. mercury
- 5. Selenium

Ans: 4