

Powers: Dental Materials, 10th Edition

Chapter 01: Introduction to Restorative Dental Materials

Test Bank

MULTIPLE CHOICE

1. Caries is caused by:
 - A. food debris.
 - B. materia alba.
 - C. bacterial plaque.
 - D. salivary glycoproteins.
 - E. acidic foodstuff.

ANS: C

	Feedback
A	Food debris does not have the structural organization of bacterial plaque biofilm.
B	Materia alba does not have the structural organization of bacterial plaque biofilm.
C	Caries is caused by bacterial plaque.
D	Salivary glycoproteins form the acquired enamel pellicle to which bacteria adhere.
E	Acidic foodstuff lowers pH and may demineralize teeth but does not directly cause decay.

REF: Pg. 1

2. Caries is most likely to occur on which of the following tooth surfaces?
 - A. Buccal
 - B. Lingual
 - C. Occlusal
 - D. Interproximal
 - E. C and D

ANS: E

	Feedback
A	Buccal surfaces are also susceptible to caries; however, there is less surface area left unchecked.
B	Lingual surfaces are also susceptible to caries; however, there is less surface area left unchecked.
C	Caries is most likely to occur in pits and fissures on the occlusal surface and on interproximal tooth surfaces where plaque accumulates unchecked.
D	Caries is most likely to occur in pits and fissures on the occlusal surface and on interproximal tooth surfaces where plaque accumulates unchecked.

E	Caries is most likely to occur in pits and fissures on the occlusal surface and on interproximal tooth surfaces where plaque accumulates unchecked.
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REF: Pg. 1

3. Which of the following is an intracoronal restoration?
- A. Ceramic-alloy crown on tooth number 21
 - B. Ceramic veneer on tooth number 8
 - C. Occlusal amalgam on tooth number 14
 - D. Ceramic onlay on tooth number 30

ANS: C

	Feedback
A	The alternate choices are all extracoronal restorations used to repair the external.
B	The alternate choices are all extracoronal restorations used to repair the external.
C	An occlusal amalgam on tooth number 14 is an example of an intracoronal restoration, meaning that the restoration is being used to repair damage restricted to the internal parts of a tooth.
D	The alternate choices are all extracoronal restorations used to repair the external.

REF: Pg. 2

4. The process by which a tooth is prepared to receive a restoration is called:
- A. convenience form.
 - B. cavity preparation.
 - C. extension.
 - D. margination.

ANS: B

	Feedback
A	<i>Convenience form</i> is a term describing the nature of the cavity preparation.
B	The process is referred to as <i>cavity preparation</i> . Cavity preparation is used to remove diseased or damaged tissue and provide a space accessible for restoration and one that can stably retain the restoration.
C	<i>Extension</i> is a term describing the nature of the cavity preparation.
D	Margination is the procedure for finishing the margins of a restoration.

REF: Pg. 4

5. Which of the following is an example of an extracoronal (direct) restoration?
- A. Laboratory-cured composite
 - B. Dental amalgam
 - C. Ceramic veneer
 - D. Cast crown

ANS: B

	Feedback
A	Laboratory-cured composite is a restoration that is constructed away from the patient in the dental laboratory.
B	Dental amalgam is an example of a direct restoration. All of the other restorations are prepared away from the tooth and then cemented or bonded to the tooth using a procedure that is independent of the manufacturer of the restoration.
C	Ceramic veneer is a restoration that is constructed away from the patient in the dental laboratory.
D	Cast crown is a restoration that is constructed away from the patient in the dental laboratory.

REF: Pg. 4

6. Which of the following is(are) examples of indirect restorations?
- A. Ceramic inlay
 - B. All-ceramic crown
 - C. Ceramic-alloy crown
 - D. A, B, and C
 - E. A and C

ANS: D

	Feedback
A	All three restorations involve lab procedures and are examples of indirect restorations.
B	All three restorations involve lab procedures and are examples of indirect restorations.
C	All three restorations involve lab procedures and are examples of indirect restorations.
D	All three restorations involve lab procedures and are examples of indirect restorations.
E	All three restorations involve lab procedures and are examples of indirect restorations.

REF: Pg. 4

7. Which of the following is an example of an extracoronal restoration?
- A. Disto-occlusal ceramic inlay on tooth number 29
 - B. Mesio-occlusal gold onlay on tooth number 15
 - C. Mesio-occlusal amalgam on tooth number 13
 - D. Occlusal ceramic inlay on tooth number 31

ANS: B

	Feedback
A	This is an example of intracoronal restoration because it fits within the internal borders of the anatomical crown.
B	An onlay involves an inlay with extension to cover or protect a cusp. Thus a mesio-occlusal gold onlay on tooth number 15 is an example of an extracoronal restoration.
C	This is an example of intracoronal restoration because it fits within the internal borders of the anatomical crown.
D	This is an example of intracoronal restoration because it fits within the internal borders of the anatomical crown.

REF: Pg. 4

8. In root canal therapy, once all of the pulpal tissue has been removed, the canal is filled with
- A. paper points.
 - B. moisture-resistant sealer.
 - C. silver point.
 - D. dental cement.

ANS: B

	Feedback
A	Paper points are used to dry the canal after irrigation.
B	The space created when the pulpal tissues are removed must be replaced with sealers that prevent ingress of bacteria.
C	Silver master points are no longer used to fill canals.
D	Dental cements may be used to seal the access opening but are not suited to fill the canals.

REF: Pg. 5

9. A(n) _____ is also known as a bridge.
- A. removable partial denture
 - B. fixed partial denture
 - C. pontic
 - D. abutment

ANS: B

	Feedback
A	A removable partial denture may be removed by the patient and is not known as a bridge.
B	A fixed (cemented) partial denture is commonly known as a bridge. The crown preparation portions of the bridge are called abutments, and the missing tooth replacement is called the pontic.
C	A pontic is an individual component of a fixed partial denture and is not known

	as a bridge.
D	An abutment is an individual component of a fixed partial denture and is not known as a bridge.

REF: Pg. 5

10. A resin-bonded fixed partial denture is sometimes used if the:
- A. abutment teeth have been endodontically treated.
 - B. abutment teeth are healthy and free of major restorations.
 - C. bridge is a long-span bridge involving more than four teeth.
 - D. bridge has only one abutment.

ANS: B

	Feedback
A	Endodontically treated teeth become brittle over time once the blood supply has been removed. The teeth need additional reinforcement.
B	A resin-bonded fixed partial denture may be used when the abutment teeth are healthy and free of major restorations. Case selection is critical, because retention problems may occur with this type of restoration.
C	Placement of crowns on the abutment teeth requires substantial sacrifice of tooth structure regardless of the condition of the abutment tooth.
D	Placement of crowns on the abutment teeth requires substantial sacrifice of tooth structure regardless of the condition of the abutment tooth.

REF: Pg. 6

11. The _____ of a fixed partial denture fills the edentulous space.
- A. abutment
 - B. pontic
 - C. connector
 - D. obturator

ANS: B

	Feedback
A	The crowned teeth are called abutments.
B	The artificial replacement tooth used to fill the edentulous space of a fixed bridge is called a pontic.
C	A connector joins crowns to pontics.
D	An obturator is used to fill tissue defects due to an accident or disease.

REF: Pg. 9

12. Dental implants are commonly fabricated from _____-based metal alloys.
- A. dental amalgam
 - B. gold

- C. titanium
- D. iron

ANS: C

	Feedback
A	Dental amalgam is used to fill intracoronal restorations.
B	Gold is used to fabricate extracoronal restorations.
C	Dental implants are commonly fabricated from titanium alloys. The surface of the implant may be titanium oxide or may be treated with other materials.
D	Iron is not a metal used in the oral environment.

REF: Pg. 11

13. Which of the following types of implants are placed into but not through bone?
- A. Endosseous
 - B. Transosseous
 - C. Subperiosteal
 - D. Mucosal

ANS: A

	Feedback
A	An endosseous implant is placed into but not through bone. It is usually a single tooth form.
B	A transosseous (staple) implant is placed through bone (e.g., the mandible).
C	A subperiosteal implant is placed between the bone and the overlying soft tissue.
D	A mucosal implant is placed between the bone and overlying soft tissue.

REF: Pg. 11

14. Which of the following is an advantage of endosseous implant placement when contrasted with fixed bridgework? Endosseous implants:
- A. leave adjacent teeth unrestored.
 - B. are less costly than fixed partial dentures.
 - C. do not require invasive surgery.
 - D. require floss threaders to clean abutment teeth.

ANS: A

	Feedback
A	Endosseous implants leave adjacent teeth unrestored.
B	Endosseous implants are relatively costly.
C	Endosseous implants require a surgical procedure.
D	Fixed partial dentures require floss threaders to clean abutment teeth.

REF: Pg. 3

15. A(n) _____ crown is placed on an implant.
- A. direct intracoronal
 - B. direct extracoronal
 - C. indirect intracoronal
 - D. indirect extracoronal

ANS: D

	Feedback
A	A direct intracoronal restoration is fabricated in the mouth.
B	Direct extracoronal restorations for implants do not exist.
C	An indirect intracoronal restoration is surrounded by tooth structure.
D	An indirect extracoronal crown is placed on an implant.

REF: Pg. 6

16. Removable partial dentures are the most appropriate restoration for:
- A. replacement of single missing teeth.
 - B. replacement of multiple missing teeth in multiple locations.
 - C. situations where there is a distal abutment tooth to anchor a fixed bridge.
 - D. A and C.
 - E. B and C.

ANS: B

	Feedback
A	Fixed partial dentures or single tooth implants are appropriate for replacement of single missing teeth.
B	Removable partial dentures are appropriate for replacement of multiple missing teeth in multiple locations.
C	Removable partial dentures are appropriate for situations in which there is not a distal abutment tooth to anchor a fixed partial denture.
D	A and C are incorrect answers.
E	C is an incorrect answer, but B is a correct answer.

REF: Pg. 9

17. The abutment teeth of a removable partial denture are engaged by:
- A. ceramic-alloy crowns.
 - B. all-ceramic crowns.
 - C. clasps.
 - D. pontics.

ANS: C

	Feedback
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A	Abutment teeth of a removable partial denture may be restored with crowns.
B	Abutment teeth of a removable partial denture may be restored with crowns.
C	Abutment teeth of a removable partial denture are engaged by clasps.
D	Pontics are artificial teeth used with fixed partial dentures to restore edentulous spaces.

REF: Pg. 9

18. Which of the following statements is true of removable partial dentures?
- A. Removable partial dentures use a framework made of acrylic.
 - B. The partial denture framework rests on tissue.
 - C. The partial denture framework rests on specific abutment teeth.
 - D. The partial denture framework rests on specific pontic teeth.

ANS: C

	Feedback
A	The framework is made of metal.
B	The acrylic portion of a removable partial denture rests on tissue.
C	The framework of a removable partial denture rests on specific abutment teeth.
D	Pontic teeth are associated with fixed rather than removable partial dentures.

REF: Pg. 9

19. _____ teeth are bonded to the framework of removable partial dentures.
- A. Ceramic
 - B. Acrylic
 - C. Resin composite
 - D. Alloy

ANS: B

	Feedback
A	Ceramic teeth are not used for removable partial dentures.
B	Acrylic teeth are bonded to the framework of removable partial dentures.
C	Resin composite is used as an esthetic restorative material.
D	Teeth cast in alloy are not used for removable partial dentures.

REF: Pg. 9

20. Which of the following is an advantage of removable partial dentures over fixed partial dentures?
- A. Removable partial dentures are more esthetic.
 - B. Removable partial dentures are more comfortable.
 - C. With removable partial dentures, it is easier to clean and inspect the remaining teeth.
 - D. Teeth adjacent to the edentulous space can be used to anchor dentures.

ANS: C

	Feedback
A	Fixed partial dentures (fixed bridgework) are more esthetic and more comfortable.
B	Fixed partial dentures (fixed bridgework) are more esthetic and more comfortable.
C	It is easier to clean and inspect the remaining teeth with removable partial dentures.
D	This is a technique used with fixed partial dentures, not removable partial dentures.

REF: Pg. 9

21. Which restoration is appropriate for an edentulous patient?
- A. Three-unit fixed partial denture
 - B. Removable partial denture
 - C. Complete denture
 - D. Acid-etched resin-bonded bridge

ANS: C

	Feedback
A	A three-unit fixed partial denture is a fixed restoration that is anchored to stable teeth in the same arch.
B	A removable partial denture is a fixed restoration that is anchored to stable teeth in the same arch.
C	A complete denture is appropriate for an edentulous patient. The complete denture may be fixed to tissue or to dental implants for retention.
D	An acid-etched resin-bonded bridge is a fixed restoration that is anchored to stable teeth in the same arch.

REF: Pg. 10

22. The phrase *fixed bridge* is a common term to describe a:
- A. complete denture.
 - B. removable partial denture.
 - C. fixed partial denture.
 - D. single tooth implant.

ANS: C

	Feedback
A	A complete denture is a removable denture.
B	A removable partial denture is a removable denture.
C	<i>Fixed bridge</i> is analogous to a <i>fixed partial denture</i> .

D	A single tooth implant is not an example of a multiunit restoration.
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REF: Pg. 5

23. Fluoride gels, rinses, and varnishes are highly effective at preventing:
- A. drifting of teeth.
 - B. gingival recession.
 - C. caries.
 - D. staining of teeth.

ANS: C

	Feedback
A	Treating periodontitis and restoring edentulous spaces prevent drifting of teeth.
B	Using the correct toothbrushing technique and avoiding periodontitis prevent gingival recession.
C	Fluoride gels, rinses, and varnishes are highly effective at preventing caries.
D	Some forms of fluoride will stain teeth.

REF: Pg. 11

24. Acid-etching is used to bond a pit and fissure sealant to:
- A. enamel.
 - B. dentin.
 - C. cementum.
 - D. dental pulp.

ANS: A

	Feedback
A	Pit and fissure sealants are bonded to enamel that is typically etched with phosphoric acid before bonding.
B	Dentin must be restored with a heavier weight material such as composite resin.
C	Cementum must be restored with a heavier weight material such as composite resin.
D	Dental pulp exposure must be treated endodontically.

REF: Pg. 11

25. Mouth protectors are used to prevent:
- A. trauma.
 - B. temporomandibular arthritis.
 - C. orthodontic crowding of teeth.
 - D. insufficient vertical dimension.

ANS: A

	Feedback
A	Mouth protectors are used to prevent trauma to the oral structures during sports.
B	Temporomandibular arthritis is a disease process.
C	Orthodontic treatment is performed to relieve crowding.
D	Insufficient vertical dimension is corrected using a partial or complete denture.

REF: Pg. 11

26. The tooth surface most susceptible to caries in older adults is(are) the:
- pits and fissures of the occlusal surface.
 - interproximal areas of all teeth.
 - cervical smooth surface of all teeth.
 - exposed root surfaces of all teeth.

ANS: D

	Feedback
A	Pits and fissures of the occlusal surface are typically more vulnerable at the time of eruption.
B	Interproximal areas of all teeth are susceptible at any age based on oral hygiene habits.
C	Cervical smooth surface of all teeth are susceptible at any age based on oral hygiene habits.
D	While all tooth surfaces can be susceptible to caries, exposed cementum is more vulnerable than enamel for caries formation due to its softer composition.

REF: Pg. 1

27. The tooth tissue most susceptible to caries in older adults is:
- enamel.
 - dentin.
 - pulp.
 - cementum.

ANS: D

	Feedback
A	Enamel is the hardest substance in the mouth and takes months or more to form carious lesions.
B	Dentin is susceptible only if exposed, because it is covered by enamel.
C	Pulp is a soft tissue and is less susceptible to caries.
D	Cementum is often exposed in older adults with gingival recession, leaving it vulnerable to the formation of caries due to its softer composition.

REF: Pg. 1

28. Which of the following tissues is most likely to be affected by periodontal disease caused by bacterial plaque?
- A. Periodontal ligament
 - B. Enamel
 - C. Pulp
 - D. Dentin

ANS: A

	Feedback
A	Unlike caries, periodontal disease affects the tissues supporting the teeth, including the gingiva, periodontal ligament, cementum, and alveolar bone.
B	Enamel is not a supporting tissue of the teeth and therefore is not affected by periodontal disease.
C	Pulp is not a supporting tissue of the teeth and therefore is not affected by periodontal disease.
D	Dentin is not a supporting tissue of the teeth and therefore is not affected by periodontal disease.

REF: Pg. 2

29. A significant cause of dental caries and periodontal disease in older adults is a direct result of poor:
- A. diet.
 - B. salivary flow.
 - C. brushing habits.
 - D. health.

ANS: B

	Feedback
A	Poor diet may contribute to caries formation and periodontal disease, but it requires additional factors to produce results.
B	Many older individuals experience decreased salivary production, which limits the body's oral immune response and promotes both caries and periodontal disease.
C	Poor brushing habits may contribute to caries formation and periodontal disease but require additional factors to produce results.
D	Poor health may contribute to caries formation and periodontal disease but requires additional factors to produce results.

REF: Pg. 2

30. Of the following, which material would not be used for an intracoronal restoration?
- A. Amalgam
 - B. Porcelain
 - C. Composite resin

ANS: B

	Feedback
A	Cavity preparations may be restored with materials such as amalgam, resin composites, cast alloys, or ceramics, or less often by gold foil.
B	Porcelain is an indirect placement material that is fabricated in the dental laboratory and cemented into place.
C	Cavity preparations may be restored with materials such as amalgam, resin composites, cast alloys, or ceramics, or less often by gold foil.

REF: Pg. 4

31. Which of the following would not be considered an extracoronal, or indirect placement, restoration?
- A. Veneer
 - B. Crown
 - C. Amalgam
 - D. Onlay

ANS: C

	Feedback
A	Veneers are extracoronal restorations that are fabricated in the dental laboratory.
B	Crowns are extracoronal restorations that are fabricated in the dental laboratory.
C	Extracoronal restorations are not conservative preparations and require a material strong enough to cover and support the exterior surfaces of the tooth.
D	Onlays are extracoronal restorations that are fabricated in the dental laboratory.

REF: Pg. 4

32. A fixed partial denture is more commonly referred to as a(n):
- A. bridge.
 - B. pontic.
 - C. veneer.
 - D. abutment.

ANS: A

	Feedback
A	The function and esthetics of missing teeth may be restored using a fixed partial denture, also known as a bridge.
B	A pontic replaces the missing tooth of a fixed partial denture.
C	A veneer covers the facial surface of a tooth.
D	An abutment covers the teeth on either side of the missing tooth in a fixed partial denture.

REF: Pg. 5

33. A resin-bonded fixed partial denture is referred to as a(n):
- A. cantilever bridge..
 - B. implant.
 - C. Maryland bridge.
 - D. veneer.

ANS: C

	Feedback
A	A cantilever bridge is fixed by only one abutment.
B	Implants replace a missing tooth by affixing a crown to a titanium post imbedded into the bone.
C	An alternative technique called a resin-bonded fixed partial denture or Maryland bridge is sometimes used if the abutment teeth are healthy and free of major restorations.
D	Veneers are used to cover the facial surface of a tooth.

REF: Pg. 5

34. Endosseous dental implants are manufactured from:
- A. titanium.
 - B. gold.
 - C. ceramic.
 - D. all of the above.
 - E. only A and C.

ANS: E

	Feedback
A	A and C are correct.
B	Gold is used to fabricate extracoronary restorations.
C	A and C are correct.
D	A and C are correct.
E	Dental implants are fabricated from special titanium-based alloys or more recently from ceramics.

REF: Pg. 6

35. Of the following, which is not an advantage of finishing and polishing a restoration?
- A. Minimized plaque retention
 - B. Minimized stain
 - C. Minimized corrosion
 - D. Minimized recurrent caries

ANS: B

	Feedback
A	The statement is an advantage.
B	Restoration also may be polished to minimize plaque retention and corrosion, and other abrasives may be used to finish the edges (margins) of the restoration to help prevent the recurrence of caries, but staining will not be minimized.
C	The statement is an advantage.
D	The statement is an advantage.

REF: Pg. 11

36. Fluoride _____ are commonly used to deliver fluoride to an area prepared for restoration.
- gels
 - rinses
 - filling materials
 - varnishes

ANS: C

	Feedback
A	Fluoride gels are highly effective at preventing caries.
B	Fluoride rinses are highly effective at preventing caries.
C	Fluoride gels, rinses, and varnishes are highly effective at preventing caries. Fluorides also have been incorporated into direct esthetic filling materials and cements.
D	Fluoride varnishes are highly effective at preventing caries.

REF: Pg. 11

SHORT ANSWER

- Compare and contrast intracoronal restorations with extracoronal restorations.

ANS:

Intracoronal restorations are used to repair damage that is restricted to the internal parts of the tooth. Extracoronal restorations are used if the damage to the tooth is extensive, because they extend beyond the interior of the tooth to cover the cusp tips and other external surfaces.

REF: Pg. 4

- Identify an advantage to a patient who wears a partial denture.

ANS:

Removable partial dentures are advantageous to the patient from the standpoint of cleaning and inspection of the remaining teeth.

REF: Pg. 10

3. Discuss the role of dental materials in treating trauma-related tooth injuries.

ANS:

Restorative materials are used to repair teeth, stabilize them until the supporting tissues heal, or replace them.

REF: Pg. 3

4. Describe the purpose of mouth protectors.

ANS:

Mouth protectors are made of polymers that absorb the energy of facial blows and prevent this energy from affecting the teeth and facial structures.

REF: Pg. 11