

## Occlusion

2. Which sulcus of the mandibular first molar does the maxillary mesiolingual cusp pass through in a lateral excursive movement on the working side?

- a. facial    b. lingual    c. central    d. distofacial

5. In the intercuspals position, the lingual cusp of the maxillary second molar contacts the

- a. distal fossa of the mandibular second premolar.  
b. mesial fossa of the mandibular first molar.  
c. distal marginal ridge of the mandibular second molar.  
d. distal marginal ridge of the mandibular first premolar.

7. In carving the occlusal surface of a permanent maxillary first molar, occlusal contact should be anticipated on the:

- (a) lingual slope of the facial cusp;  
(b) facial slope of the lingual cusp;  
(c) facial slope of the facial cusp;  
(d) lingual slope of the lingual cusp.

- A. (a), (b) and (c)    B. (a), (b) and (d)    C. (c) and (d)    D. All of the above

9. The design of a restored occlusal surface is dependent upon the

- A. contour of the articular eminence.  
B. position of the tooth in the arch.  
C. amount of lateral shift in the rotating condyle.  
D. amount of vertical overlap of anterior teeth

1. A and C    2. B, C, and D    3. B and Donly    4. C and D only    5. All of the above

10. A male patient comes to you from another office complaining of discomfort associated from a brand new MOD gold onlay on tooth #4 that was placed by the previous dentist. Upon your examination you note the following:

- a. the pain only occurs when eating and when moving his jaw in certain directions.  
b. the pain does not occur when the teeth are closed in centric occlusion.  
c. the pain does occur when the patient tries to bite his fingernails using just his upper and lower central incisors.  
d. the pain almost consistently occurs when the patient moves his jaw to the left.  
e. the pain is limited to the area of #4 and not in the TMJ.

From this information what do you suspect is the problem?

1. The patient is experiencing only protrusive interferences.
2. The patient is experiencing protrusive and non-working interferences.
3. The patient is experiencing protrusive and working interferences.
4. The patient is a baby and should live with the pain.
5. none of the above

11. If there is a large horizontal overlap of the anterior teeth so that the incisal edges of the lowers are about 3 mm from the lingual surface of the upper teeth what might you suspect about the occlusal surfaces of the posterior teeth.

- a. will not be worn down
- b. will be worn down
- c. will not occlude with each other when going into protrusive position.
- d. will occlude with each other when going into protrusive position.

1. a, c    2. a only    3. b  
only    4. a, d    5. b, d

18. Which of the following statements are true concerning the fabrication of a wax pattern?

- a. The occlusal morphology is frequently determined by the patient's adjacent and opposing teeth.
- b. The occlusal morphology should be an accurate replication of the tooth's original morphology.
- c. Occlusal contacts should be in maximum intercuspal position.
- d. The pattern should be invested immediately after margination to insure maximum accuracy.
- e. The pattern should be invested approximately 30 minutes after margination to allow the pattern to reach room temperature.

A. a,b,d    B. b,c,d,e    C. a,c,d    D. a,b,c,e    E. a,c,e

32. Which of the following statements is/are true concerning the evaluation of the occlusion on a cast restoration?

- A. The restoration is in proper occlusion if it holds silver mylar.
- B. The restoration is in proper occlusion if the adjacent teeth hold silver mylar.
- C. The restoration is in proper occlusion if when tested with marking material there are multiple reciprocating points of contact on the restoration.
- D. A,B & C
- E. None of the above

38. Which of the following would indicate a casting that is in hyper-occlusion?
- A. The casting holds 1 thickness of mylar and the adjacent teeth hold 3 thickness of mylar.
  - B. The margins of the casting fit accurately on the stone die but are uniformly open on the tooth.
  - C. The markings with colored marking material are the same on the adjacent teeth with or without the casting in the mouth.
  - D. A & B
  - E. A,B & C

32. Which of the following would be evaluated as acceptable in the category of occlusion for the final cast gold restoration? Assume the patient has all teeth contacting in maximum intercuspal position and they have good anterior guidance.
- a. The casting holds one thickness of mylar and the adjacent teeth hold two thickness of mylar.
  - b. The adjacent teeth hold one thickness of mylar and the casting holds four thickness of mylar.
  - c. When marking the centric and excursive contacts the excursive contacts extend beyond the centric contacts on the restoration.
  - d. a & b
  - e. none of the above

30. Which of the following evaluations of a Provisional restoration would justify a "T" in the category of OCCLUSION?
- a. The teeth adjacent to the provisional and the provisional hold silver mylar evenly.
  - b. When marking the centric occlusion with articulating material the adjacent teeth and provisional mark evenly in black. When evaluating the excursive contacts there are red marks that correspond to the black centric marks.
  - c. The teeth adjacent to the provisional will not hold mylar in centric occlusion. The provisional holds mylar in centric occlusion.
- A) a B) b C) c D) b,c E) none of the above

34. Which of the following could result in a provisional being in hyper-occlusion?
- a. A nodule on the plaster cast at the occlusal surface of the tooth adjacent to the prepared tooth.
  - b. A void on the plaster cast at the occlusal surface of the prepared tooth.
  - c. Excessive removal of plaster from the proximal contact areas of the teeth adjacent to the prepared tooth.
  - d. A small void (.5 mm in diameter) on the patient's diagnostic cast at the occlusal surface of the tooth to be prepared. The Ellman form used to make the provisional was made on this cast. The occlusal reduction on the patient's tooth is satisfactory.
- A) a,b,c B) b, c, d C) b, d D) a,c,d E) a,b,c,d

38. A casting would be in hyper-occlusion when:

- A. The adjacent teeth hold mylar and the casting does not hold mylar.
- B. When checked with articulating material the casting marks in centric, and the adjacent teeth do not mark.
- C. The casting holds one thickness of mylar and the adjacent teeth hold four thicknesses of mylar.
- D. A & C
- E. B & C

24. In a normal class I occlusion, the anterior teeth should:

- a. Hold one piece of mylar equally with the posterior teeth.
- b. Hold one piece of mylar with the posterior teeth dragging one piece of mylar.
- c. Drag one piece of mylar with the posterior teeth holding one piece of mylar.
- d. Be should be just slightly out of occlusion to allow for lateral movements.
- e. Be checked with marking paper only.

43. The definition of anterior group function is:

- a. During the path of right lateral movement, #6, #7 & #8 should contact the opposing dentition equally without any of the posterior teeth contacting each other.
- b. During the path of right lateral movement, #6, #7 & #8 should contact the opposing dentition equally with the right posterior teeth lightly contacting each other.
- c. During the path of right lateral movement, #6, #7 & #8 should contact the opposing dentition equally with the left posterior teeth lightly contacting each other.
- d. During the path of right lateral movement, #9, #10 & #11 should contact the opposing dentition equally without the right posterior teeth contacting each other.
- e. During the path of right lateral movement, #9, #10 & #11 should contact the opposing dentition equally with the right posterior teeth lightly contacting each other.

31. Which type of an occlusal scheme gives the dentist the most problem when attempting to do a three unit fixed partial denture on teeth #19, #20 (pontic) & #21 with #18 also present.

- a. Severe curve of Wilson
- b. Severe Anterior-posterior curve
- c. Severe Medio-lateral curve
- d. Severe Ala-tragus curve
- e. Severe anti-monson curve

23. Which of the following meets the criteria for an acceptable evaluation in the category of occlusion when evaluating a provisional restoration?

- 1. With the teeth in occlusion the adjacent teeth hold mylar and the provisional allows mylar to pull through with resistance.
- 2. With the teeth in occlusion the provisional holds mylar and the adjacent teeth allow the mylar to pull through with resistance.

3. In an excursive balancing position the provisional has marks with the articulating material and the adjacent teeth do not have marks from the articulating material.

4. With the teeth in occlusion the adjacent teeth and the provisional all hold one thickness of mylar.

- a) 1, 2, 3    b) 1, 2, 4    c) 2, 4    d) 1, 3, 4    e) 1, 4

23. What grade should be given in the category of occlusion for a provisional restoration which holds one thickness of silver mylar. The adjacent occlusal contacts will not hold four thicknesses of silver mylar.

1. R
2. S
3. M
4. T

1. Which of the following statements is/are not true about CR:

1. it is a repeatable, reproducible position because it is a bone-to-bone relationship
  2. it is an unstrained position
  3. it may be different in every patient
  4. the angle of the mandible should be allowed to drop
  5. it is the position of choice when restoring your patients who need extensive restorative work
  6. one set of diagnostic casts should routinely be mounted in CR to help provide a complete diagnosis
- a. 1, 2, 4, & 6
  - b. 1, 3, 5, & 6
  - c. 1 & 4 only \*
  - d. 3 & 4 only
  - e. 2, 3, 5, & 6

2. While you are performing an occlusal analysis on a patient, you observe deviation of the mandible upon opening to the patient's right side. Which TMJ is on the affected side?

- a. right side \*
- b. left side
- c. both sides

3. Integral parts of making an occlusal analysis include:

1. taking a case history
2. performing a clinical examination
3. determination of the reasons and motives for seeking treatment
4. knowledge of the patient's prior health status

5. information about previous dental treatment
  6. evaluation of patient psychic status
  7. evaluation of functional disturbances
    - a. 1 & 2
    - b. 1, 3, 4, 5, & 6
    - c. 1, 2, 5, & 7
    - d. all of the above \*
    - e. correct answer not provided
4. For a muscle relaxation appliance to be optimally effective, the condyles must be located  
in their most musculoskeletally stable position, which is:
- a. postural position
  - b. at the vertical dimension of rest
  - c. centric relation \*
  - d. maximum intercuspal position
  - e. alert feeding position
6. The purpose of having a patient protrude at least 5 mm forward during the taking of a protrusive record is to provide enough condylar movement away from CR to provide an accurate measurement of the Bennett side shift.
- a. True
  - b. False \*
8. Which statements regarding the temporomandibular joint are not true?
1. The TMJ is technically referred to as a ginglymoarthrodial joint and is considered a synovial joint.
  2. The articular disc of the TMJ is composed of dense fibrous connective tissue and is filled with blood vessels and nerve fibers.
  3. The articular disc is somewhat flexible and can adapt resiliently and reversibly to the functional demands of the articular surfaces.
  4. The TMJ consists of two distinct cavities: the superior cavity, which is bordered by the articular fossa and the superior surface of the disc, and the inferior cavity, which is bordered by the mandibular condyle and the inferior surface of the disc.
  5. The ligaments of the TMJ do not enter actively into joint function but instead act as passive restraining devices to limit and restrict border movements.
- a. 1, 2, & 4
  - b. 3 & 4
  - c. 2, 3, & 4

- d. 1, 4, & 5
- e. 2 & 3 \*

9. If you measured your patient's condylar inclination to be 6.5 and you are considering altering the Curve of Spee through multiple restorations, in order to set the articulator so that a negative error would result, you would set it to:
- 1. 6 and plan on incorporating a more acute Curve of Spee
  - 2. 7 and plan on incorporating a more acute Curve of Spee
  - 3. 6 and plan on incorporating a less acute Curve of Spee \*
  - 4. 7 and plan on incorporating a less acute Curve of Spee
10. Christensen's phenomenon refers to:
- a. the angle of the articular eminence
  - b. the amount of separation of the anterior teeth in excursions
  - c. the separation of the posterior teeth during protrusion \*
  - d. the translation of the condyles during opening
11. Protrusive movement is measured in the following plane:
- a. horizontal
  - b. sagittal \*
  - c. frontal
  - d. anterior
12. The axipath recording provides what information:
- 1. intercondylar distance
  - 2. condylar inclination
  - 3. Bennett side shift
  - 4. hinge axis
  - 5. anterior guidance
    - a. all of the above
    - b. correct answer not provided
    - c. 1, 2, 3
    - d. 2, 3, 4 \*
    - e. 1, 3, 5
13. The main reason a facebow is used is: X
- a. to relate the maxillary cast to the lower member of the articulator
  - b. to relate the lower member of the articulator to the upper member of the articulator
  - c. to establish the proper vertical dimension of occlusion
  - d. to relate the maxillary cast to the upper member of the articulator \*
  - e. to relate the maxillary cast to the upper and lower members of the articulator
14. The Bennett movement is best described as the:
- a. medial shift of the orbiting condyle \*
  - b. lateral movement of the working condyle

- c. lateral shift of the mandible in the direction of the working condyle
  - d. bodily shift of the mandible in the direction of the non-working condyle
15. Anterior guidance is a result of:
- a. horizontal and vertical overlap \*
  - b. vertical and posterior cusp height
  - c. horizontal overlap and posterior cusp height
  - d. intercondylar distance and freeway space
  - e. intercondylar distance and postural vertical dimension
16. The design of a restored occlusal surface is affected by the:
- 1. contour of the articular eminence
  - 2. position of the tooth in the arch
  - 3. amount of medial shift in the orbiting condyle
  - 4. degree of compensation of the Curve of Wilson
  - 5. degree of compensation of the Curve of Spee
    - a. 3 & 6 only
    - b. 1, 2, 3, & 4
    - c. 2 & 4 only
    - d. 1, 2, 3 & 5 \*
    - e. all of the above
17. When the mouth is open, there is more interocclusal distance anteriorly than posterior because of the:
- a. curve of Spee
  - b. shape of the articular eminence
  - c. anterior inclination of the teeth
  - d. rotary nature of the opening-closing movement \*
18. The non-working condyle performs which of the following movements?
- a. straight forward
  - b. downward, forward, and lateral
  - c. downward, forward, and medial \*
  - d. downward, backward, and medial
19. When posterior teeth are in a crossbite relationship, which of the following cusps are considered shearing cusps?
- 1. maxillary buccal
  - 2. maxillary lingual
  - 3. mandibular buccal
  - 4. mandibular lingual
    - a. 1 & 3
    - b. 1 & 4
    - c. 2 & 3 \*
    - d. 2 & 4

20. Which of the following statements is/are true?

- a. Wax is an excellent material to utilize for interocclusal records because it is easy to use and when cool, is very dimensionally stable.
- b. The wax occlusion rim should be made on a cast that is different from the one you are mounting so that you do not risk damaging the better cast.
- c. Mutually protected occlusion is preferable to other occlusal schemes for complete dentures because it allows for immediate disclusion.
- d. Group function or balanced occlusion is indicated in Class III occlusions.
- e. Both cuspid guidance and anterior group function are different types of mutually protected occlusal schemes. \*

21. Which of the following statements is/are true about the facebow transfer?

- 1. The Panadent facebow utilizes the kinematic axis for its posterior reference.
  - 2. Various facebows utilize different reference points. It is acceptable to change reference points during treatment as long as you know what you're doing.
  - 3. The Panadent facebow employs the external auditory meati as posterior reference points and the nose as the anterior reference point.
  - 4. The plane of the Panadent facebow follows Frankfurt Horizontal plane, which is approximately 23mm. below the anterior reference point.
  - 5. The indentations of the cusps/incisal edges in the compound on the bitefork should be large enough to help in stabilization of the cast.
  - 6. The facebow assembly must be completely tightened, the marker on the bitefork lined up with the dental midline, and the nasion relator below the plane of the facebow.
- a. 4 only \*
  - b. 6 only
  - c. 1, 3, & 5
  - d. 2, 4, 5, & 6
  - e. 1, 2, & 5

22. What must you take into consideration when choosing a technique for recording jaw relationships?

- 1. the location of the remaining dentition
  - 2. the periodontal condition of the remaining dentition
  - 3. number of teeth remaining in the mouth
  - 4. the stability of the mandibular position
  - 5. presence or absence of TMJ pathosis
- a. none of the above
  - b. 1, 3, & 4

- c. 2, 3, & 5
- d. 2 & 4 only
- e. all of the above \*

23. A patient presents to your office with no TMJ pathosis or symptoms, needs a removable partial denture to replace teeth #18-21, and requires no other treatment. Tooth #17 is missing. All other teeth in the patient's mouth are present and periodontally sound.

How

do you mount your casts?

a. the maxillary cast is mounted with a facebow, and the mandibular cast with a wax

occlusal rim to register CR

b. the casts are hand articulated because vertical dimension of occlusion is not being altered

PVS

c. the maxillary cast is mounted with a facebow, and the mandibular cast with a

CR record over the edentulous area

wax

d. the maxillary cast is mounted with a facebow, and the mandibular cast with a

occlusal rim to register MIP \*

PVS

e. the maxillary cast is mounted with a facebow, and the mandibular cast with a

MIP record over the edentulous area

24. A patient presents to your office with no TMJ pathosis or symptoms, needs two removable partial dentures to replace teeth #2-5, 12-15, 18-21, and 28-31. All four third molars are missing. Only anterior teeth are present in the patient's mouth. How do you

mount your casts?

a. the maxillary cast is mounted with a wax occlusal rim and a facebow, and the mandibular cast with a wax occlusal rim to register CR \*

b. the casts are hand articulated because vertical dimension of occlusion is not being altered

c. the maxillary cast is mounted with a wax occlusal rim and a facebow, and the mandibular cast with PVS CR records over the edentulous areas

d. the maxillary cast is mounted with a wax occlusal rim and a facebow, and the mandibular cast with a wax occlusal rim to register MIP

e. the maxillary cast is mounted with a wax occlusal rim and a facebow, and the mandibular cast with a PVS MIP record over the edentulous areas

25. Which of the following statements about centric relation is/are true:

- are
1. CR records with only one small perforation caused by tooth-to-tooth contact acceptable
  2. Patient posture can have a significant effect on jaw relation registrations.
  3. The split cast technique is one way to verify that CR is reproducible.
  4. It may be necessary to deprogram some patients with a splint for a prolonged period of time if they are difficult to manipulate into CR.
  5. CR is defined by and limited to the relationship of the condyle to the articular eminence.
    - a. 1, 4, & 5
    - b. 2, 3, & 4 \*
    - c. 2, 3, & 5
    - d. 1 & 4 only
    - e. 3 & 5 only

26. Which of the following statements is/are false:

1. The purpose of the posterior teeth is to chew and break up food, maintain the vertical dimension and separate the anterior teeth during function.
2. It is recommended to place PVS registration material over all the teeth in the arch, including unprepared adjacent teeth, when making an MIP interocclusal record.
3. It is recommended to place PVS registration material over all the posterior teeth, including the canines, when making a CR interocclusal record.
4. The movement from CR to MIP is called centric slide and is present in approximately 90% of the population.
5. A protrusive record taken at 15mm. protrusion would be even more accurate than one taken at only 6mm.
  - a. all of the above
  - b. 5 only
  - c. 1, 2, & 5 \*
  - d. 2, 3, & 4
  - e. 1, 3, & 4

27. Which of the following statements is/are false:

- a. Movement along the hinge axis of the mandible occurs in a sagittal plane and affects ridge groove direction. \*
- b. Movement along the vertical axis of the mandible occurs in a horizontal plane and affects ridge groove direction.
- c. The relationship of the anterior teeth, the angle of the articular eminence, and the Curve of Spee all affect posterior tooth cusp height and fossae depth.
- d. A larger vertical overlap of the anterior teeth will allow longer posterior cusps.

e. Leaf gauges, Lucia Jigs, and anterior deprogrammers have the same purpose.

28. A patient presents to your office with no TMJ pathosis or symptoms, needs two removable partial dentures to replace teeth #2-5 & #18-21, and requires no other treatment. Teeth #1 & 17 are missing. All other teeth in the patient's mouth are

present

and periodontally sound. How do you mount your casts?

a. the maxillary cast is mounted with a wax occlusal rim and facebow, and the mandibular cast with a wax occlusal rim to register CR \*

b. casts are hand articulated because vertical dimension of occlusion won't be altered

c. the maxillary cast is mounted with a facebow, while bilateral PVS CR records are

made over the edentulous areas

d. the maxillary cast is mounted with a wax occlusal rim and facebow, and the mandibular cast with a wax occlusal rim to register MIP

e. the maxillary cast is mounted with a facebow, while bilateral PVS MIP records are

made over the edentulous areas

29. If the condylar inclination on the articulator is decreased to a lesser angle than the patient

record dictated and the patterns were waxed to the flatter inclination, there would be no

danger of cross mouth interference when the castings are seated in the mouth.

a. True \*

b. False

30. The previous scenario is called:

a. Positive error

b. Negative error \*

c. Positive correction

d. Negative correction

31. Changes in vertical dimension can be made with complete accuracy on the articulator:

a. if the maxillary cast was mounted using the kinematic hinge axis \*

b. if the maxillary cast was mounted using an arbitrary hinge axis

c. if the mandibular cast was mounted using an accurate interocclusal record

d. if the casts were mounted in maximum intercuspation

32. After a maxillary splint has been seated and adjusted, if the mandible is guided into CR

which teeth should be contacting the splint?

a. only the functional cusps of the posterior mandibular teeth

b. only the noncentric cusps of the posterior mandibular teeth

- c. all incisal edges and supporting cusps of the mandibular teeth \*
- d. only the incisal edges of the anterior teeth slightly

33. When using bimanual manipulation of the patient into CR:

1. the head must be relaxed and unsupported
2. the mandible is forced into a retruded position
3. the mandible is forced into an anterosuperior position
4. the mandible is gently placed into an anterosuperior position
5. the operator should be at the 12 o'clock position behind the patient's head
6. the patient should be supine
  - a. 1 & 3
  - b. 1, 4, 5, & 6
  - c. 2, 5, & 6
  - d. 4, 5, & 6 \*
  - e. 1, 3, & 6

34. Christensen's phenomenon allows us to use protrusive check bites to set the condylar inclination.

- a. True \*
- b. False

35. Which of the following statement(s) is/are true of a functional analysis of the gnathostomatic system? \*

1. One of the main objectives is to evaluate the patient for the presence or absence of occlusal, myofacial, or TMJ disorders
2. This analysis involves the taking of an extensive case history and performing a thorough examination with special attention to occlusal disharmonies and their possible sequelae
3. One of the main objectives is to determine the severity and etiology of any existing disorders or pathosis
4. One of the main objectives is to make a decision whether to treat or refer the patient
5. Models, whether hand held or mounted on the articulator, are of no value in determining the presence or absence of pathology, and therefore this analysis

is the

only way to diagnose a patient you suspect exhibits pathology

- a. 1, 2, 3, & 4 \*
- b. 1, 3, 4, & 5
- c. 2, 3, & 5
- d. 2, 4, & 5
- e. all of the above

36. With the deprogrammer in place the following is true:

- a. the condyles will be placed against the retrodiscal tissue
- b. there will be minimal clearance between the posterior teeth \*
- c. the lingual slope of the deprogrammer guides the mandible into CR
- d. all of the above
- e. none of the above

37. When unilateral contraction of the inferior lateral pterygoid muscle occurs what is the

the resultant movement? \*

- a. initial upward closure of the mandible
- b. forward movement of the condyle from the articular fossa
- c. a laterotrusive movement of the condyle affecting a lateral movement of the mandible to the same side
- d. final forceful closure of the molars through a bolus of food
- e. a mediotrusive movement of the condyle affecting a lateral movement of the mandible to the opposite side \*

38. The axipath recorder finds the same information as:

- 1. the facebow
- 2. the split cast technique
- 3. the protrusive record \*
- 4. the incisal guide table
- 5. the nightguard

39. The anterior deprogrammer is essential because it:

- 1. relaxes the mandible thus causing the condyles to seat in an anterior/superior position
- 2. it breaks the proprioceptive input from the teeth
- 3. it prevents the contact of the posterior teeth during the record making
- 4. it establishes a consistent vertical dimension for record to record
- 5. helps to stabilize the casts during mounting procedures
  - a. 3, 4, & 5
  - b. 1, 2, & 4
  - c. 1, 3, 4, & 5
  - d. all of the above
  - e. 2, 3, & 4 \*

40. Any time a system has forces introduced which exceed its physiologic limits, the system

will break down at the weakest point. Most commonly the breakdown will occur at the

level of the teeth in the form of mobility, at the level of the periodontium in the form of

of periodontitis, or the TMJ in the form of clicking.

- a. True \*
- b. False

41. Which of the following statements is/are incorrect?

1. Irreversible hydrocolloid impression material sets by an irreversible chemical reaction in which the sol, calcium alginate, becomes the gel, potassium alginate.
3. Centric relation is defined as the most posterosuperior unstrained position of the condyles in the articular fossae with the discs properly interposed.
4. The antero-posterior compensating curve is called the Curve of Spee and the lateral components curve is called the Curve of Wilson.
5. The lingual cusps of the mandibular posterior teeth and the buccal cusps of the maxillary posterior teeth are called centric or supporting cusps, and are primarily responsible for maintaining the vertical dimension of occlusion.
6. When using a non-adjustable articulator, the dentist saves time in mounting casts but pays for this in increased chair time adjusting the restoration intraorally in the appropriate eccentric movements because the articulator has incorporated negative error.
7. In a laterotrusive movement the sideways movement of the orbiting (translating) condyle (measured in the horizontal plane) is called Bennett side shift (angle).

- a. 1, 3, 5, 6, & 7
- b. 1, 2, 3, & 5
- c. 2, 4, 5, 6, & 7
- d. 1, 2, 4, & 5 \*
- e. 1, 3, 4, & 6

42. A custom incisal guide table:

1. protects the CR record
2. duplicates and preserves the patient's existing anterior guidance prior to alteration of the teeth
3. preserves the therapeutic anterior guidance established by diagnostic wax-up for a patient who is edentulous in the anterior region
4. preserves the casts from damage during manipulation on the articulator
5. provides the appropriate anterior controlling factors
6. aids in setting the condylar inclination
  - a. all of the above
  - b. 1, 4, 5 & 6
  - c. 2, 3, 4, & 5 \*
  - d. 1, 2, 3, & 6

e. 2, 3, & 4 only

43. During the left lateral excursion of the mandible, translation of the condyle takes place in

the (1) TMJ while rotation takes place in the (2) TMJ.

- a. (1)=left, (2)=right
- b. (1)=right, (2)=left \*
- c. (1)=left, (2)=left
- d. (1)=right, (2)=right

44. The necessity for locating an actual terminal hinge axis increases as the thickness of the

CR record:

- a. increases \*
- b. decreases

45. Condylar inclination is:

- 1. measured in relationship to the occlusal plane
- 2. the angle formed by the anterior slope of the articular eminence
- 3. the resultant angle of motion of the condyle/disc assembly down the posterior slope of the articular eminence
- 4. the same on both the right and the left
- 5. can be set for each patient by changing the blue analogs (which are available in

.5mm increments) on your Panadent articulator

- a. 2 only
- b. 3 only \*
- c. 1, 3, & 4
- d. 3 & 5
- e. 1, 2, & 4

46. In a mutually protected functional occlusion:

- a. the anterior teeth protect the posterior teeth in all movements
- b. the molars protect the bicuspids and vice versa
- c. the anteriors protect the posteriors during eccentric movements, and the posteriors protect the anteriors during centric closure \*
- d. the anteriors protect the molars in eccentric closure

47. The lesser the angle of the slopes of the eminentia of the TMJ:

- a. the lesser the concavity of the maxillary anterior teeth must be
- b. the shorter the cusps and shallower the fossae must be \*
- c. the longer the cusps of the posterior teeth must be
- d. the deeper the fossae of the posterior must be
- e. the more negative error we have in our restorations

48. When mounting casts for a patient with 3 prepared posterior teeth in one quadrant,

without a stable posterior stop, the casts may be hand-occluded in MIP without taking an interocclusal record.

- a. True
- b. False \*

49. A patient presents to your office with no TMJ pathosis or symptoms, needs a four-unit fixed partial denture on teeth #12-15, and requires no other treatment. Teeth #12 & 15

are prepared and periodontally sound. Teeth #13, 14 and 16 are missing. All mandibular

teeth in the opposing quadrant are present. How do you mount your casts?

- a. the maxillary cast is mounted with a wax occlusal rim and facebow, and the mandibular cast will be mounted in CR
- b. the casts are hand articulated because vertical dimension of occlusion is not being altered
- c. the maxillary cast is mounted with a facebow, and the mandibular cast with a PVS CR record over the prepared teeth only
- d. the maxillary cast is mounted with a wax occlusal rim and facebow, and the mandibular cast will be mounted in MIP
- e. the maxillary cast is mounted with a facebow, and the mandibular cast with a PVS MIP record over the prepared teeth only \*

50. The purpose of the protrusive record is:

- a. to relate the maxillary cast to the articulator
- b. to set the condylar pathway \*
- c. to establish the Christensen's phenomenon
- d. to establish the progressive side shift
- e. to measure how far the jaw can protrude

51. If no occlusion-related pathology is found after initial examination of your patient:

- 1. the tissues are functioning in a state of equilibrium
- 2. this situation cannot be improved upon
- 3. it is important to equilibrate the patient's occlusion to assure this healthy state

is

maintained

4. the forces generated by occlusal activity fall within the range of adaptability of

the

patient

5. treatment is contraindicated

6. you should proceed with a full functional analysis

- a. 1, 3, 4, & 5
- b. 1, 2, 4, 5, & 6
- c. 2, 4, 5, & 6
- d. 1, 2, 4, & 5 \*

e. 2, 4, & 5

52. It is advisable to perform an occlusal equilibration on patients for whom you have diagnosed the need for a full mouth reconstruction prior to beginning restorative procedures. Doing so, will greatly simplify all subsequent jaw relation record making procedures.

- a. True \*
- b. False

53. When a muscle relaxation bite splint is adjusted in the reclined position, the splint should

be readjusted with the patient upright in a slightly head forward position.

- a. True \*
- b. False

54. Which if the following statement(s) is/are true:

1. the vertical dimension with the teeth in maximum intercuspation is called the vertical dimension of occlusion
2. the vertical dimension at rest is measured by marking the nose and chin, asking the patient to say the letter S and then relax with lips barely touching, and measuring the distance between the marks
3. the difference between vertical dimension of occlusion and at rest is called the freeway space
4. another term for freeway space is interocclusal distance
5. another term for vertical dimension at rest is postural position
6. individual tolerance to opening vertical dimension can be determined by having the patient wear an interocclusal splint for a designated period of time

- a. all of the above
- b. 1, 2, & 4
- c. 2, 3, 5, & 6
- d. 1, 3, 4, 5, & 6 \*
- e. 1, 2, & 5

55. When delivering an occlusal splint, if the splint does not go right into place, it is most likely the \_\_\_\_\_ that are interfering.

- a. embrasures \*
- b. cusps tips
- c. marginal ridges
- d. triangular ridges
- e. cusp ridges

56. A patient presents to your office complaining of pain in his right TMJ. He tells you

that

he leads a very stressful life since he is a dental student at USC and has his

Occlusion

final coming up. Upon clinical examination, you notice that the right masseter muscle is

sensitive to palpation. After diagnostic casts are mounted, you note that he has a heavy

non-working interference on #2. What do you do for this patient?

a. Put the patient on pain medications and muscle relaxants for one week so he is

in no pain for his final.

b. Fabricate an occlusal guard using the casts you have.

c. Tell the patient not to worry because it will go away once his exam is over.

d. Make two new sets of impressions and fabricate a splint for him on another set of

6 casts, deliver as soon as possible, and observe for resolution of symptoms for

6 weeks prior to adjustment. \*

e. Assure him that he will do well on his exam because Occlusion is easy.

57. Which of the following statements about balanced occlusion is/are false?

a. Balanced occlusion occurs rarely in the natural dentition and when it does, it is extremely damaging to the gnathostomatic system.

b. One of the concepts that balanced occlusion is based on is Bonwill's triangle which

purports that the maxilla and mandible are adapted to an equilateral triangle.

c. One of the concepts that balanced occlusion is based on is the Curve of Spee, which says that the cusp and incisal edges display a curved alignment when observed from the frontal plane. \*

d. One of the concepts that balanced occlusion is based on is Monson's Spherical

theory, which states that the composite arrangement of the occlusal surfaces of all

teeth conforms to a segment of a sphere.

58. Which aspect of the occlusal analysis is tested by placing a fingernail on the buccal surface of each tooth individually?

a. anterior slide

b. occlusal trauma

c. fremitus \*

d. abfraction

e. pdl widening

59. Which of the following statements regarding procedures for mounting casts is/are

not

true?

1. Edentulous record bases must be made on a stone cast other than the one you will mount on your articulator so that you can be sure not to damage the good one you will mount.
2. Justifiable reasons to restore a patient in MIP would be because the patient has no TMD, has adequate remaining vertical stops, does not require the vertical dimension of occlusion to be altered, or that the patient feels more comfortable in MIP.
3. Record bases are most stable when made using the salt and pepper technique to minimize polymerization shrinkage and should be made a minimum of 24 hours before use to allow for complete cure.
4. Bite blocks must not contact opposing teeth.
5. The best way to verify your mounting is to check the location (articulating paper) and degree of contacts (silver mylar) in the mouth and on the mounted casts.
- 1, 2, 3
  - 2, 4, 5
  - 3 & 4 only
  - 1, 4, 5
  - 1 & 2 only \*

60. Pure rotation of the mandible can occur in centric relation for approximately \_\_\_\_\_mm of incisal opening before translation occurs.
- 5 mm
  - 10 mm
  - 18 mm
  - 25 mm
  - 35 mm \*

61. Patient X presents to you with pain in the left TMJ, which he states started a few days ago. He tells you that he has had this pain before but it comes and goes. Upon palpation, you observe tenderness of the masseter muscle. Upon intra-oral examination, you note a non-working interference on #14. Which of the following (in order of sequence) would you include in your treatment plan to help in the diagnosis for this patient?

- occlusal equilibration of #14
  - occlusal analysis
  - splint therapy
  - mounted casts in MIP
  - mounted casts in CR
- 3, 2, 1, 4, 5
  - 4, 5, 1, 3, 2
  - 2, 4, 5, 1, 3

- d. 4, 5, 2, 3, 1 \*
- e. 1, 4, 5, 2, 3

62. Which of the following statements regarding occlusal adjustment is/are false?

1. After approximately 6 weeks of symptom-free wearing of an occlusal splint (the patient had symptoms before), it is safe to proceed with occlusal adjustment.
2. Centric slide is only sometimes responsible for TMJ pathosis and must only be eliminated when it is diagnosed through splint therapy.
3. It is the goal of occlusal equilibration to eliminate centric slide & all interferences.
4. Occlusal adjustment is performed in the following order: 1. Protrusive, 2. Lateral (working and non-working), 3. Centric.
5. When adjusting the maxillary teeth in protrusive you will grind the distal inclines in a mesial direction.
6. When adjusting the mandibular teeth in centric, you will grind the distal inclines in an antero-posterior direction.
  - a. all of the above
  - b. 1, 4, 5, 6
  - c. 2, 3, 5, 6
  - d. 1, 2, & 4
  - e. none of the above \*

63. Which of the following determinants of occlusion are programmable on the fully adjustable articulator?

1. direction of the working condyle
2. anterior guidance
3. Bennett side shift
4. intercondylar distance
5. angle of the eminence
  - a. 1, 2, 4, 5
  - b. 2, 3, 5
  - c. 1, 3, 4
  - d. 2, 3, 4, 5
  - e. all of the above \*

64. What is/are the indication(s) for a group function occlusal scheme?

1. Class I occlusions
2. Class II, Division I occlusions
3. Class II, Division II occlusions
4. Class III occlusions
5. Anterior teeth which are compromised or missing
6. Posterior teeth which are compromised or missing
  - a. 1, 3, & 6
  - b. 2 & 3

- c. 2, 4, & 5 \*
- d. 2, 5, & 6
- e. 1, 4, & 5

65. Which of the following statement(s) is/are not true?

- a. Muscle splinting is the initial reaction of the muscles to altered sensory or proprioceptive input or injury.
- b. An occlusal splint is always worn for a period of time prior to any occlusal equilibration.
- c. If the patient is asymptomatic after wearing a splint for a period of time, and all muscle spasms have subsided, then the patient must be informed that the appliance must be worn for the rest of his life to prevent the muscles from spasming again. \*
- d. An occlusal splint is indicated when you will be opening the patient's vertical dimension to determine if the patient will be able to tolerate it.
- e. Another name for the occlusal splint is the nightguard and in this capacity, its function is to protect the teeth from damage that may occur during parafunctional activities that the patient may or may not be aware of during sleep.

66. What are the indications for selective grinding?

- 1. Necessary major restorative procedures like full mouth reconstructions, large fixed partial dentures, multiple single units
- 2. Post-orthodontic patients to help establish a more stable occlusion
- 3. Dysfunction of any component of the stomatognathic system occurring as a direct result of occlusal disharmony
- 4. Prophylactically to correct potentially harmful centric slides
  - a. 2 & 3 only \*
  - b. 3 & 4 only
  - c. 1 & 4 only
  - d. 1, 2, 3
  - e. all of the above

67. Which occlusal scheme is the least damaging to the natural dentition in the presence of

- parafunctional activity?
  - a. balanced occlusion
  - b. group function
  - c. mutually protected occlusion \*

68. Which of the following statements regarding splint fabrication and delivery is/are true?

- 1. Block out of the patient's casts is rarely necessary during splint fabrication procedures so that better adaptation of the acrylic will result.

- splint
2. After processing, prior to removing the splint from the cast, the entire cast-assembly should be remounted on the articulator to enable you to refine the occlusion on the splint in the lab in order to cut down on chair side adjustment time and effort.
3. It is very important that the cast, on which the splint is made, is preserved after the acrylic appliance has been removed.
4. All mandibular teeth should simultaneously contact the splint in centric relation.
5. In excursive movements, only the cuspids (& possibly all or some of the incisors) should contact the splint, while the posterior teeth disclude, if the splint is delivered properly.
6. The biting surface of the splint in the posterior should be relatively flat with only shallow depressions for cusp tips.
- a. 1, 2, 4, 5
  - b. 1, 4, 6
  - c. 2, 4, 5, 6 \*
  - d. all of the above
  - e. 3, 4, 6

69. Which of the following statement(s) is/are true?

1. Mounted casts are useful while performing an occlusal analysis as they allow better access to assess interferences, deviations, and various relationships within the mouth from a different perspective.
2. Diagnostic casts should never be altered.
3. Mounted casts are often very helpful in making an accurate diagnosis as well as in predicting potential treatment outcomes.
4. The main value of mounted casts is in planning the sequence for making occlusal adjustments in the mouth.
5. Another function of mounted casts is in planning restorative treatment and as an aid in making case presentations to the patient.
- a. 1, 2, & 5
  - b. 2, 3, 4, & 5
  - c. all of the above \*
  - d. correct answer not provided
  - e. 1, 3, & 4

70. If patient X has a greater vertical overlap of the maxillary anteriors than patient Y, then patient X must need shorter posterior cusps than patient Y.

- a. True
- b. False \*

71. Which of the following statement(s) is/are false?

- 1. A centric relation splint is a reversible and easy method for eliminating other etiologies, while focusing on occlusal trauma as the primary cause.
- 2. Tissue forces from the lips, tongue, and cheeks are not great enough to move teeth.
- 3. The position of the tooth when lingual forces are in equilibrium with labial is called the neutral position.
- 4. The optimum thickness of an anterior deprogrammer at its thinnest point should be .5 mm.
- 5. Jaw relation records will vary as patient positioning varies.
  - a. 1 & 5
  - b. 3 & 4
  - c. 2 only
  - d. 2 & 4 \*
  - e. 4 only

72. What procedures will you perform on your patient in order to fully program your semi-

adjustable Panadent articulator?

- 1. Facebow
- 2. Check bites
- 3. Axi-path recording
- 4. Pantographic recording
- 5. Stereographic recording
  - a. all of the above
  - b. 1, 2, 3 \*
  - c. 1, 2, 4
  - d. 1, 2, 4, 5
  - e. 2, 3, 5

73. Rotation around the hinge axis results in movement in the \_\_\_\_\_ plane.

- a. sagittal \*
- b. vertical
- c. frontal
- d. horizontal

74. Rotation around the hinge axis will affect cusp height and fossae depth.

- a. True \*
- b. False

75. The best way to verify your mounted diagnostic casts are mounted in CR is:

- a. make sure the incisal pin is set at zero

- b. make sure CR and MIP are coincident
- c. make sure initial contact is the same in the mouth as with the mounted casts \*
- d. ask the patient if it is accurate

76. Which of the following structures covers the articulating surfaces of the TMJ?

- a. synovial membrane
- b. hyaline cartilage
- c. vascular fibrous connective tissue
- d. dense avascular fibrous connective tissue \*
- e. dense avascular elastic connective tissue

77. The following is an anomaly of the interarch alignment of teeth:

- a. rotated teeth
- b. tilted teeth
- c. crossbite \*
- d. missing teeth

78. If patient A exhibits more Bennett side shift than patient B, then patient A will require

his working and non-working grooves to be more mesial on the lower teeth and more

distal on the upper teeth than patient B will require.

- a. True \*
- b. False

79. Which of the following structures are considered as major ligaments of the TMJ?

- 1. sphenomandibular ligament
  - 2. temporomandibular ligament
  - 3. collateral (discal) ligament
  - 4. capsular ligament
- a. 1, 2, 3, 4
  - b. 1, 2, 4, 5
  - c. 2, 3, 4, 5
  - d. 2, 3, 4 \*
  - e. 2, 4, 5

80. If Jane has an immediate Bennett side shift of 1mm and Tarzan has a progressive Bennett side shift of 1mm, which patient would require flatter cusps?

- 1. Jane \*
- 2. Tarzan

81. The glenoid fossa is an oval cavity or a depression in the:

- a. maxilla, just anterior to the malar process
- b. temporal bone, just anterior to the auditory canal \*
- c. mandible, just posterior to the internal oblique ridge

82. A facebow transfer is necessary to give a correct relationship of:
- a. eminentia distance
  - b. eminentia angle
  - c. antero-posterior relationship to hinge axis \*
  - d. interocclusal distance
  - e. condyle distance to nasion

3- To establish an incisal guide table, which of the following is needed

- a) A face bow
- b) Accurately mounted casts
- c) Arcon articulator is preferred
- d) Protrusive bite registration

A) a & b & d B) a & c & d C) b & d D) a & d E) all of the above

33. In a patients who is experiencing acute TMJ pain what is the appropriate initial treatment?
- A. Myofunctional therapy and cold compress
  - B. Occlusal equilibration and moist heat packs
  - C. Fabrication of occlusal splint
  - D. Orthodontic treatment
  - E. Referral to oral surgeon for TMJ surgical consultation

3. An Arcon articulator is when

- a. The condylar elements are placed on the upper member of the articulator
- b. The condylar elements are placed on the lower member of the articulator
- c. There are no condylar elements
- d. None of the above
- e. The articulator acts as a simple hinge.

16. A patients tooth is prepared for a CVC restoration and the provisional restoration is in hypo-occlusion. What is the most probable result this will have on the final restoration?

- a. The final restoration will be in hypo-occlusion
- b. The final restoration will be in hyper occlusion
- c. The tooth will be hypersensitive
- d. This will not have any negative effect on the final restoration.
- e. The final restoration will be in perfect occlusion

21. Which of the following meets the criteria for an acceptable evaluation in the category of occlusion when evaluating a provisional restoration?

1. With the teeth in occlusion the adjacent teeth hold mylar and the provisional allows mylar to pull through with resistance
2. With the teeth in occlusion the provisional holds mylar and the adjacent teeth allow mylar to pull through with resistance
3. In an excursive balancing position the provisional has marks with the articulating material and the adjacent teeth do not have marks from the articulating materials
4. With the teeth in occlusion the adjacent teeth and the provisionals all hold one thickness of mylar.

- a. 1,2,3.
- b. 1,2,4.
- c. 2,4.
- d. 1,3,4.
- e. 4.

38. The final occlusion after completion of your prefabricated post and amalgam core build up through your provisional restoration should be.

- a. Holds one thickness of silver mylar
- b. Contacts only on the acrylic resin
- c. No occlusal contacts
- d. Drags one thickness of silver mylar.
- e. Drags two thicknesses of silver mylar

2. Where the occlusal surface of a PFM is partly porcelain and partly metal, the centric contact closest to the porcelain-metal junction (P-M) should be:

- a. On metal, at least 1 mm from the P-M junction
- b. On porcelain, at least 1mm from the P-M junction
- c. At the P-M junction

2. An acrylic provisional must not be:

- a. Sub
- b. In hyper-occlusion by one mylar
- c. In hypo-occlusion by four mylars
- d. Cemented with IRM
- e. None of the above

30. Which of the following statements is true concerning the evaluation of the occlusion on a cast restoration?

- A. The restoration is in proper occlusion if it holds silver mylar.
- B. The restoration is in proper occlusion if the adjacent teeth hold silver mylar.
- C. The restoration is in proper occlusion if when tested with marking material there are multiple points of contact on the restoration.

- D. The restoration is in proper occlusion if when tested with silver mylar the mylar pulls through with resistance.
- E. None of the above

1. A patient's tooth is prepared for a CVC restoration and the provisional restoration is in hypo-occlusion. What is the most probable result this will have on the final restoration?

- a. The final restoration will be in hypo-occlusion.
- b. The final restoration will be in hyper-occlusion.
- c. The tooth will be hypersensitive.
- d. This will not have any negative effect on the final restoration.

1. When doing a posterior indirect tooth-colored restoration the occlusion should be evaluated:

- a. in the patient's mouth prior to bonding
- b. in the patient's mouth after bonding
- c. on the articulated cast prior to trying-in in the patient's mouth
- d. b & c
- e. a, b, & c

26. Which of the following might result in an acrylic provisional that is in hypo-occlusion?

- a. The Ellman form did not seat completely on the plaster cast.
- b. Excessive pressure was placed on the Ellman form in the area of the preparation when fabricating the provisional.
- c. Excessive occlusal adjustment.
- d. An excessive amount of Alcote was used on the plaster cast.

- A. a,c      B. b,c      C. c      D. c,d      E. a,b,c,d

#### National Board Questions - Occlusion

1. In restoring a canine protected occlusion, with anterior overbite of about 2mm. The Buccal cusps of posterior teeth should be flat, BECAUSE they will guide protrusion.

- a. both are true
- b. only the second statement is true
- c. both are false
- d. only the first statement is true

2. Why will a class I molar relationship develop in patient with a flush terminal plane?

- a. the maxillary molar will drift mesially
- b. the mandibular molar will drift mesially

3. What do you expect to occur in a child with an anterior edge to edge bite?

- a. class II malocclusion
- b. class III malocclusion
- c. class I malocclusion

4. When seating a quadrant of onlays, the occlusal relationship should be

- a. slight supraocclusion to allow final adjustment of the castings in a few days
- b. slight infraocclusion to allow teeth to seek their antagonists in a few days and to facilitate cementing procedures
- c. opposing teeth contacting the castings to the same degree that teeth contact on the opposite side
- d. a cusp-to-fossa relationship
- e. a cusp-to-marginal ridge relationship

5. The marginal ridges of posterior teeth are frequently involved in cast restorations. It is necessary that the restored marginal ridges be

- a. in contact with the cusps of opposing teeth
- b. in contact with the marginal ridges of opposing teeth
- c. rounded to help form the occlusal embrasures
- d. out of contact with opposing teeth
- e. in contact with opposing fossae

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

6. Which of the following is the best method for evaluating centric occlusion on a newly placed onlay restoration?

- a. shim stock
- b. articulating paper
- c. patient feedback
- d. occlusal indicator wax

7. Radiographic signs of trauma from occlusion include each of the following EXCEPT one. Which one is the EXCEPTION?

- a. hypercementosis
- b. root resorption
- c. alteration of the lamina dura
- d. alteration of the periodontal space
- e. vascular infiltration of the periodontal ligament

8. A change in continuity of the occlusal plane is often observed after ankylosis of a tooth. This change is caused by

- a. differential eruption sequences
- b. the ankylosed teeth sinking into the alveolar bone
- c. localized growth inhibition of the alveolar process
- d. continued eruption of non-ankylosed teeth and growth of the alveolar process

9. When using an occlusal separator, a practitioner can expect which of the following types of TMJ disorders to respond most favorably?

- a. chronic dislocation
- b. muscle spasm
- c. capsular fibrosis
- d. unilateral condylar hyperplasia

10. Aging of the pulp is evidenced by an increase in

- a. vascularity
- b. cellular elements
- c. fibrous elements
- d. pulp stones

11. For a complete denture balanced occlusion, the lingual cusps of maxillary posterior teeth on the non-working side contact which areas of the mandibular posterior teeth?

- a. the facial inclines of the lingual cusps
- b. the lingual inclines of the lingual cusps
- c. the lingual inclines of the facial cusps
- d. the central fossae

12. A dentist restored an endodontically treated tooth with a cast post-and-core and a metal ceramic crown. Three months later, the patient calls and complains of pain, especially on biting. Tooth mobility is normal, as are the radiographs. The most probable cause of pain is

- a. a loose crown
- b. psychosomatic
- c. a vertical root fracture
- d. a premature eccentric contact

13. The lower one third of a patient's face appears too short and there is an apparent loss of the vermilion border of the lips. Which of the following procedures is indicated to correct this situation?

- a. moving the anterior teeth facially
- b. increasing the interocclusal distance
- c. decreasing the occlusal vertical dimension
- d. increasing the occlusal vertical dimension

14. A patient undergoes an extraction of a permanent mandibular first molar and elects NOT to have the tooth replaced. Over a period of time, the teeth adjacent to the extraction site are likely to move in which of the following directions?

Movement of the Second molar	Movement of the Second Premolar
a. mesial	distal
b. none	distal
c. mesial	none

15. The speech sounds that bring the mandible closest to the maxilla are the

- a. "s" sounds
- b. "f" and "v" sounds
- c. "t" and "th" sounds
- d. vowel sounds

16. A child who has a distal step in the primary dentition generally develops which of the following molar relationships in the permanent dentition?

- a. class I
- b. class II
- c. class III

17. Which of the following represent(s) an early effect of primary traumatic occlusion?

- a. vertical pocket formation
- b. generalized alveolar bone loss
- c. undermining resorption of alveolar bone
- d. hemorrhage and thrombosis of blood vessels in the periodontal ligament

18. The one relation of the condyles to the fossae in which a pure hinging movement is possible is

- a. centric occlusion
- b. retruded contact position
- c. postural position of the mandible (rest vertical dimension)
- d. transverse horizontal axis (terminal hinge position)

19. Group function occlusion is characterized by having

- a. non-working contacts
- b. working contacts
- c. protrusive contacts
- d. a long centric

20. Secondary trauma from occlusion is seen in cases where

- a. healthy gingival and osseous tissues are present
- b. traumatic changes are occurring in periodontal tissues of teeth with normal supporting bone
- c. normal occlusal forces cause trauma to the attachment apparatus of teeth with inadequate bone support

21. The dentist seats a full gold crown on a patient's mandibular right second molar. As the patient closes and as the teeth come into initial contact, the patient's jaw deflects to the right. Before treatment, the patient's occlusal relationship had been stable. To regain stability, the dentist will adjust the crown. On which incline of which cusp should the adjustments be made?

- | Incline           | Cusp    |
|-------------------|---------|
| a. inner(lingual) | facial  |
| b. outer(facial)  | facial  |
| c. inner(facial)  | lingual |
| d. outer(lingual) | lingual |

22. Under which of the following conditions will it be critical to mount a patient's casts on the true hinge axis?

- a. when the patient has severe classII occlusal relation
- b. when the patient requires several fixed partial dentures
- c. when the dentist plans to change the vertical dimension through restorations
- d. when the dentist plans to fabricate dentures with high-cusped teeth on a fully adjusted articulator

23. The dentist plans to place a crown on a patient's maxillary canine. Altering the existing canine-guided occlusion in a right-lateral excursive movement to that of a group- function will result in which of the following?

- a. greater clearance on the left side- less potential for a non-working contact
- b. less clearance on the left side- greater potential for a non-working contact
- c. no effect on the non-working side clearance

24. Which of the following jaw-relation records should be used for setting both the medial and superior condylar guides on an arcon articulator?

- a. intercuspation
- b. centric relation
- c. lateral interocclusal records
- d. protrusive interocclusal records

25. An incorrect occlusal vertical dimension causes a patient to overclose and to have a poor facial profile. To correct this problem, the dentist should do which of the following?

- a. increase the rest vertical dimension and increase the interocclusal distance
- b. decrease the rest vertical dimension and diminish the interocclusal distance
- c. decrease the occlusal vertical dimension and increase interocclusal distance
- d. increase the occlusal vertical dimension and diminish the interocclusal distance

26. Which of the following adverse conditions may arise if the occlusal vertical dimension is increased?

- a. the closing muscles may become strained
- b. the opening muscles may become strained
- c. the closing muscles may become too relaxed
- d. soreness may occur at the corners of the mouth

27. A practitioner is restoring the mesio-occlusal marginal ridge of a maxillary left second molar. If the marginal ridge is higher than the adjacent tooth, then it can create a problem in which of the following excursions?

- a. protrusive
- b. retrusive
- c. working
- d. non-working

28. A patient who has a class III malocclusion presents for treatment. Each of the following is a helpful diagnostic aid to distinguish between maxillary retrusion and mandibular protrusion EXCEPT one. Which one is this EXCEPTION?

- a. photography
- b. cephalometry
- c. study models
- d. clinical evaluation

29. Non-working interferences usually occur on the inner aspects of the

- a. facial cusps of maxillary molars
- b. facial cusps of mandibular molars
- c. lingual cusps of maxillary premolars
- d. facial cusps of maxillary premolars

30. What happens to the permanent molar occlusion in the presence of a flush (straight) terminal plane and mandibular primate spaces?

- a. erupts end-to-end; early mesial shift into class I occlusion
- b. erupts end-to-end; late mesial shift into class I occlusion
- c. erupts with class II tendency
- d. erupts with class III tendency

31. Which of the following describes primary occlusal trauma?

- a. it is the first incidence of trauma that a tooth experiences
- b. it is a trauma that produces irreversible damage to the periodontium
- c. mobility is caused by excessive forces on a normal periodontium
- d. mobility is caused by excessive forces on a reduced periodontium

32. In a restorative problem involving all teeth in the mouth, the protrusive condylar path inclination has a primary influence on the

- a. incisal guidance
- b. anterior teeth only
- c. mesial inclines of the mandibular cusps
- d. mesial inclines of the maxillary cusps

33. In lateral movements, the non-working condyle moves in what direction?

- a. out, back and up
- b. up, back and down
- c. down, forward and medially
- d. down, forward and laterally
- e. none of the above

34. The type of load on teeth that is most destructive to the periodontium is the

- a. vertical
- b. oblique
- c. horizontal

35. When establishing balanced occlusion, lingual cusps of maxillary posterior teeth on the non-working side should contact the

- a. facial inclines of lingual cusps of mandibular posterior teeth
- b. lingual inclines of lingual cusps of mandibular posterior teeth
- c. lingual inclines of facial cusps of mandibular posterior teeth
- d. central fossae of mandibular posterior teeth

36. When a cusp is in deflective occlusal contact in centric relation, but does not contact in one or more of the eccentric movements, grinding should be performed on

- a. both the cusp and the opposing area
- b. the opposing fossa or the marginal ridge
- c. opposing areas in eccentric positions
- d. the cusp that is in deflective occlusal contact

37. After the maxillary cast has been correctly mounted on the articulator, the functionally correct relation of the mandibular cast to the maxillary cast may be established by using

- a. an index made in centric relation but short of tooth contact
- b. cusps and sulci of the remaining teeth as guides for relating the mandibular cast to the maxillary cast
- c. a wax index in which the patient has brought the mandibular teeth into maximal contact with the opposing teeth
- d. a wax index into which the patient has closed from the postural rest position just penetrating the wax to tooth contact

38. Translation in mandibular opening movement occurs

- a. on closing from centric relation
- b. on initial opening from centric relation
- c. in the upper compartment of the temporomandibular joint
- d. in the lower compartment of the temporomandibular joint

39. In a canine-protected occlusion, which prepared tooth cannot be evaluated for adequate clearance by lateral excursions of the mandible?

- a. maxillary canine
- b. maxillary first molar
- c. maxillary first premolar
- d. mandibular second molar
- e. mandibular second premolar

40. Protrusive jaw relation records are used to

- a. give direction to the occlusal plane
- b. set the incisal guides of the articulator
- c. set the lateral posts of the articulator

- d. set the condylar inclinations of the articulator

41. Under which of the following conditions is it most important to mount a patient's casts on the hinge axis?

- a. the patient has a severe class II occlusal relation
- b. several fixed partial dentures need to be constructed
- c. a change in vertical dimension through restorations is planned
- d. dentures with high cusp teeth are to be fabricated on a fully adjusted articulator

42. When the mandible is in its physiologic rest position, the distance between occluding surfaces of maxillary and mandibular teeth or occlusion rims is

- a. centric occlusion
- b. vertical dimension
- c. interocclusal distance
- d. vertical dimension of rest

43. A face-bow transfer record allows the dentist to

- a. locate the hinge axis
- b. record centric relation more reliably
- c. position the maxillary cast properly in relation to the mandibular cast
- d. transfer the cast to the articulator maintaining the proper interocclusal relationships that are present in the mouth

- 1. a and c
- 2. a and d
- 3. b and d
- 4. all of the above
- 5. none of the above

44. Group function occlusion in a natural dentition is characterized by having

- a. canine rise in protrusion
- b. no non-working side contacts
- c. working contacts from anterior and posterior teeth
- d. total balance in lateral excursion

e. a long centric from centric relation to centric occlusion

1. a, b and c only
2. a, b and e
3. a and c only
4. a, d and e
5. b and c only
6. d and e only

45. Which of the following is the functionally generated occlusal registration in an indirect gold casting technique?

- a. centric relation
- b. anatomic registration
- c. registration of the envelope of occlusion
- d. static registration of dynamic occlusion

46. Radiographic signs of trauma from occlusion include

- a. hypercementosis
- b. root resorption
- c. alteration of the lamina dura
- d. alteration of the periodontal space
- e. vascular infiltration of the periodontal ligament

1. a, b, c and d
2. a, c and d only
3. a, c and e
4. c, d and e
5. all of the above

47. It is desirable to reduce occlusal interference in the existing dentition before constructing a fixed partial denture to

- a. prevent trauma to the restoration
- b. reduce the amount of adjustment to the restoration after the insertion
- c. maintain a more accurate anatomic occlusal surface on the restoration
- d. prevent duplicating the deflective occlusal contact in the restoration

48. A permanent maxillary first molar has extruded 4 mm. beyond the plane of the occlusion into the space where the corresponding mandibular molar is missing. This situation should be corrected by

- a. extracting the extruded maxillary molar and constructing fixed prostheses for both spaces
- b. restoring the maxillary molar to a satisfactory plane of occlusion with a cast restoration, then constructing a mandibular fixed prostheses
- c. cutting the extruded maxillary molar off the working cast, constructing a mandibular fixed prostheses and equilibrating the maxillary molar to the new occlusal plane after the mandibular fixed prostheses is cemented
- d. reshaping and repolishing the maxillary molar to an acceptable occlusal plane by selective grinding, then constructing a mandibular fixed prostheses

49. During postinsertion adjustment, errors in occlusion may be checked most accurately by

- a. having the patient leave the dentures out of the mouth for 24 hours
- b. directing the patient to close the jaws, bringing the teeth into occlusion
- c. having the patient close in occlusion and making a transfer record to the articulator
- d. remounting the dentures on the articulator using remount casts and new interocclusal records

50. The incisal guidance on the articulator is the

- a. horizontal guidance
- b. same as the condylar guidance
- c. mechanical equivalent of the compensation curve
- d. mechanical equivalent of horizontal and vertical overlaps

51. The hinge axis face-bow transfer is of value because it

- a. assures an accurate centric relation record
- b. enables alteration in vertical dimension on the articulator
- c. facilitates mounting the mandibular cast in the center of the articulator
- d. maintains the condyles in their most retruded positions in the glenoid fossae

52. In recording centric relation, the mandible can be retruded by having the patient

- a. relax the jaw muscles while the dentist manually manipulates the chin up and down
- b. turn the tongue backward toward the posterior border of the palate
- c. protrude and retrude the mandible repeatedly
- d. make repeated swallowing movements
- e. all of the above

53. When adjusting the condylar guidance for protrusive relationship, what is the position of the incisal guide pin?

- a. in contact with the incisal guide table
- b. raised out of contact with the incisal guide table
- c. adjusted to the setting of the incisal guide
- d. any of the above. The position of the guide pin is not important

54. Diagnostic casts normally mounted in centric relation rather than maximum intercuspation because

- a. an evaluation of all existing occlusal relationships is necessary
- b. centric relation provides maximum cusp contact
- c. maximum intercuspation is a characteristic of centric occlusion
- d. maximum intercuspation is the most posterior relation of the mandible to the maxilla at the established vertical relation

55. Examination of the mounted diagnostic casts should help ascertain

- a. the crown-root ratio and the long axis relationship of proposed abutment teeth
- b. the relationship of opposing teeth to abutment teeth and to the spaces, as well as the presence of periodontal pockets
- c. the long axis relationship of proposed abutment teeth, the amount of tooth reduction necessary to arrive at retentive preparations and the compatible path of insertion
- d. evidence of premature contact, the presence of periodontal pockets and relationships in occlusion
- e. all of the above