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**PRECLINICAL MCQ TESTS  
IN  
ENDODONTICS**

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**Dear third year students,**

**This is the book “Preclinical MCQ Tests in Endodontics” .**

**It will help you to prepare for your preclinical exam in Conservative Dentistry.**

**All the questions and answers are based on the given lectures in Endodontics for the sixth semester of your education in the Faculty of Dental Medicine.**

**My colleagues and me do believe in you and your success!**

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## TEST 1

### ENDODONTICS: SUBJECT, GOAL AND OBJECTIVES.

#### ANATOMY OF PULP CAVITY

**1. The three basic steps of endodontic treatment can be identified as follow:**

- a) Endodontic access, removing tectum puplae, finding orificies
- b) The diagnostic phase, the preparatory phase, the obturation phase
- c) Endodontic access, removing the pulp in cavum pulpae, medication
- d) Preparing cavum pulpae, preparing root canals, establishing working length

**2. The root canals are surrounded by:**

- a) Dentin
- b) Cementum
- c) Jaw bone
- d) Enamel

**3. Mark the odd one out: Parts of cavum pulpae are:**

- a) Orificies
- b) Pulp horns
- c) Apical foramen
- d) Pulp floor

**4. Cementum- dentinal junction is part of:**

- a) Apical foramen
- b) Cavum pulpae
- c) Pulp hornes
- d) Orificies

**5. The endodontic access for upper central incisor:**

- a) Depends on the age of the patient
- b) Has triangular shape
- c) Has ovoid shape
- d) Is made on the vestibular side

**6. The second maxillary premolar has:**

- a) Strictly one root canal
- b) Two roots
- c) One or two root canals
- d) Three roots

**7. The maxillary first molar has root canals, named as follow:**

- a) Mesio- lingual, mesio- buccal, distal
- b) Mesio- lingual, mesio- buccal, disto- buccal, disto- lingual
- c) Medio- buccal, disto- buccal, palatal
- d) Buccal, palatal, disto- lingual

**8. If there are 4 root canals on maxillary first molar, where it is most likely to find the fourth one?**

- a) Disto- lingually
- b) Mesio- palatally
- c) Mesio- buccally
- d) Disto- buccally

**9. Mandibular First Molar has:**

- a) Two roots
- b) Three roots
- c) Two root canals
- d) Four roots

**10. Lateral canals might be find:**

- a) In cavum pulpae
- b) In the area of orificies
- c) In area of bifurcation or trifurcation
- d) There are no lateral canals except on wisdom teeth

**11. Lower first premolar has:**

- a) Two roots
- b) Three roots
- c) One root canal

d) One or two root canals

**12. The longest root and root canal is on:**

- a) Canine
- b) Maxillary first molar
- c) Upper lateral incisor
- d) Mandibular second premolar

**13. If there are two root canals on mandibular first premolar there will be as follow:**

- a) Bucal and lingual
- b) Mesial and distal
- c) Palatal and mesial
- d) There is no mandibular first premolar with two root canals

**14. Mandibular first molar roots are:**

- a) Mesial and distal
- b) Buccal and distal
- c) Mesio- buccal, disto- buccal, palatal
- d) Mesio- buccal, mesio- lingual, distal

**15. Is it possible for mandibular central incisor to have two root canals:**

- a) Yes, one buccal and one lingual
- b) Yes, one mesial and one distal
- c) No, there are just two roots
- d) No, there is only one root canal

**16. If there is second mesio- buccal canal on maxillary molar the orifice can be located:**

- a) Between the Mesio- Bucal and Palatal orificies
- b) Between Disto- buccal and Palatal orificiess
- c) Between palatal and mesio- lingual orificies
- d) Between mesio- buccal and mesio- lingual orificies

**17. Is it possible to have more than one root canal in one root?**

- a) Yes

- b) No
- c) Only in maxillary molars
- d) Only in mandibular molars

**18. What is the difference between apical constriction and apical foramen?**

- a) The apical constriction is more apically than the apical foramen
- b) The apical constriction is more coronal than the apical foramen
- c) They are one and the same anatomical dentinal structure
- d) The apical constriction is typical only for molars

**19. Root canal is:**

- a) A portion of the pulp cavity from the pulp horn to the apical foramen
- b) A portion of the pulp cavity from the roof of the pulp chamber to the orifice
- c) A portion of the pulp cavity from the orifice to the apical foramen
- d) In not a portion of the pulp cavity

**20. Endodontics is a branch of dentistry concerned with:**

- a) The morphology, physiology, and pathology of the human dental pulp and periradicular tissues.
- b) The morphology, physiology, and pathology of the human dental pulp without hard dental tissues and periradicular tissues
- c) The morphology, physiology, and pathology of the hard dental tissues and gingiva
- d) The morphology, physiology, and pathology of hard dental tissues, dental pulp

## TEST 2

### ENDODONTIC TREATMENT – GOALS, BIOLOGICAL AND MECHANICAL PRINCIPLES. RUBBER DAM.

**1. Mark the odd one out: Why it is preferable to use rubber dam during our daily endodontic treatment?**

- a) To prevent aspiration of instruments
- b) To ease the work of the hand piece
- c) To work free of saliva
- d) For better moisture control

**2. The advantages of placing rubber dam are not:**

- a) Potentially improved properties of dental materials
- b) Not time consuming
- c) Protection of the patient and operator
- d) A dry, clean operating field

**3. Which oral conditions may not preclude the use of the rubber dam?**

- a) Teeth that have not erupted sufficiently to support a retainer
- b) Tooth with a caries decay
- c) Some third molars
- d) Extremely malpositioned teeth

**4. Rubber dam material has a shiny and a dull side., Which side is generally placed facing the occlusal side of the isolated teeth?**

- a) The dull side because it is less light reflective
- b) The shiny side because it is less light reflective
- c) It does not matter
- d) The shiny side because materials won't get stick to it

**5. The size of the rubber dam is:**

- a) 5 × 6 inch
- b) 5 × 5 inch and 6 × 6 inch
- c) 6 × 6 inch

d) 5 × 5 inch

**6. The Young holder is:**

a) Is a plastic star like holder

b) Has many different sizes and shapes are available, with specific retainers designed for certain teeth

c) Consists of four prongs and two jaws connected by a bow

d) U-shaped metal frame

**7. The rubber dam retainer:**

a) Is a plastic star like holder

b) Has many different sizes and shapes are available, with specific retainers designed for certain teeth

c) Consists of four prongs and two jaws connected by a bow

d) U-shaped metal frame

**8. The..... consists of four prongs and two jaws connected by a bow.**

a) Rubber dam retainer

b) Rubber dam frame

c) Punch

**9. When positioned on a tooth, a properly selected retainer should contact the tooth at:**

a) 4 areas

b) 2 areas

c) 6 areas

d) is should not contact the tooth

**10. The wings of the clamps of rubber dam are designed to:**

a) To stabilize the clamp

b) Provide extra retraction of the rubber dam from the operating field

c) To have an interference with the matrixes and wedges

d) Exclude the need of rubber dam frame

**11. A disadvantage of the winged retainer is:**

a) That wings often interfere with the placement of matrix bands, band retainers, and wedges

b) The extra retraction of the rubber dam from the operating field

- c) The attachment of the dam to the retainer before conveying the retainer (with dam) to the anchor tooth
- d) That is suitable for anterior teeth only

**12. Additional accessories to the rubber dam set are:**

- a) Napkin, frame, clamp
- b) Napkin, dental floss, lubricant
- c) Clams, frame, floss
- d) Lubricant, forceps

**13. Which one is not concerning to dental floss?**

- a) Ingestion or aspiration of the clamp
- b) Assessing the condition of the mesial and distal contact areas
- c) Facilitating the passage of the rubber sheet beneath them
- d) May position the rubber dam on any tooth

**14. Absorbents such as cotton rolls, cellulose wafers, and gauze sponges provide:**

- a) Satisfactory dryness for short periods
- b) Non- satisfactory dryness for short periods
- c) Satisfactory dryness for long periods
- d) Satisfactory dryness especially in endodontics

**15. When using absorbents such as cotton rolls on maxillary first molar where the cotton rolls should be positioned?**

- a) One bucal and one palatal
- b) One buccally
- c) One lingual and one buccally
- d) There is not enough space for cotton rolls

**16. When using absorbents such as cotton rolls on mandibular first molar where the cotton rolls should be positioned?**

- a) One bucal and one palatal
- b) One bucal
- c) One lingual and one bucal
- d) There is not enough space for cotton rolls

**17. When using absorbents such as cotton rolls on maxillary second molar where the cotton rolls should be positioned?**

- a) One buccally and one palatally
- b) One buccally
- c) One lingual and one buccally
- d) There is not enough space for cotton rolls

**18. The butterfly shaped clamp is mostly suitable for:**

- a) Lower teeth
- b) Frontal teeth
- c) Distal teeth
- d) Upper teeth

**19. The retainer is used to:**

- a) Exclude the need of rubber dam frame
- b) Retract the soft tissues
- c) Anchor the dam to the most anterior tooth to be isolated
- d) Anchor the dam to the most posterior tooth to be isolated

**20. The dark colour of rubber dam is preferred:**

- a) To match the clamps
- b) For aesthetics
- c) For contrast
- d) It is not referred

## TEST 3

### ENDODONTIC ACCESS

**1. Mark the odd one out:**

- a) Proper cleaning and shaping establish the necessary conditions for the success of the endodontic treatment
- b) what you remove from the root canal is more important than what you place inside
- c) what you place inside the root canal is more important than what you remove from it
- d) It would be mistaken to try to disinfect and three-dimensionally obturate a root canal that had not been previously cleaned and shaped.

**2. What if the access cavity is not prepared properly in terms of position, depth, or extent?**

- a) The depth and extent of access cavity are not connected to the root canal treatment
- b) It can be corrected after preparation, medication and obturation of tooth canal system
- c) It doesn't matter, the important is to reach full working length
- d) It will hamper the achievement of optimal results

**3. Good endodontic cleaning begins with:**

- a) Reaching the apex of the tooth
- b) The removal of the endodontic contents from the pulp chamber and leave it in area of horns
- c) The preparation of the apical third
- d) The removal of the endodontic contents from the pulp chamber and its horns

**4. The cleaning of the root canal should be as .....as possible.**

- a) Gentle
- b) Thorough
- c) Quick

**5. If the roof of pulp chamber is not completely removed:**

- a) The tooth will be stronger
- b) It is contraindicated to remove the whole roof
- c) It will leave more intact tooth structures
- d) It will not be possible to perform proper cleaning of the pulp horns

**6. Discoloration of the endodontically-treated tooth may occur if:**

- a) We obturate the root canal up to full working length
- b) We use sodium hypochlorite as an irrigant
- c) The chamber roof is not completely removed
- d) The preparation of canals is made with endodontic instruments with taper .06

**7. Fill the sentence: We can facilitate the introduction of canal instruments into the root canal openings:**

- a) To provide access as direct as possible to the apical one third of the canal
- b) Because endodontic instruments should be deflected by any obstruction in the crown
- c) And the endodontic instruments should touch the walls of the pulp chamber
- d) In order to be easier for the operator to obturate the canals

**8. It is always advisable to prepare wide access cavities and generously remove old metallic restorations to avoid having to enlarge the cavity intraoperatively. Why?**

- a) to have better visuality of the operative field
- b) It is not advisable
- c) The handpiece spray may obstruct the canals that have already been prepared or are in the preparation phase by forcing fragments into them
- d) Because the operator won't have enough time to do this intraoperatively

**9. Mark the odd one out: The four walls of the access cavity are needed ....**

- a) To facilitate positioning of the rubber dam so that the clamp is stable
- b) Keeping the pulp chamber constantly flooded with as much irrigating solution as possible
- c) Stable reference points for the rubber stops on the endodontic instruments
- d) For better aesthetics

**10. The access cavity:**

- a) Depends on the working position of dentist
- b) Must assume a pre-determined, geometric shape
- c) Must not assume a pre-determined, geometric shape
- d) Need necessarily remain unaltered during treatment, but can be modified as needed by contingent circumstances

**11. The access cavity should always be created through**

- a) Always on the approximal surface
- b) the approximal or gingival surface
- c) The occlusal or lingual surface
- d) Always on the occlusal surface

**12. In the penetration phase for access cavity should be made by:**

- a) Round, diamond bur mounted on a high- speed handpiece
- b) Round, diamond bur mounted on a low- speed handpiece
- c) Sterile metal bur mounted on a high- speed handpiece
- d) Sterile metal bur mounted on a low- speed handpiece

**13. The objective of penetration phase is to:**

- a) “Penetrate” the pulp chamber by breaking through the roof with the bur
- b) “Penetrate” the pulp floor
- c) To remove the contents of cavum pulpa
- d) To straighten the walls of the cavity in order to have straight-line access to the apical-third of the root canal

**14. The pulp chamber may be very narrow or completely absent not because of:**

- a) The development of abundant calcifications
- b) The age of the patient
- c) The diagnosis
- d) The bur we use for preparation phase

**15. Diamond burs are not preferred for the penetration phase of making endo access because:**

- a) They are better tolerated by patients than the metal ones
- b) Their shape is more appropriate
- c) They vibrate less than the metal ones
- d) They cut more smoothly than metal ones

**16. The penetration phase of endo access concludes when**

- a) The bur reaches dentin

- b) The caries is totally scooped out
- c) The walls become divergent
- d) The bur penetrates the pulp chamber

**17. The enlargement phase of endodontic access is performed with:**

- a) A fissure bur mounted on a low-speed handpiece
- b) A round bur mounted on a high-speed handpiece
- c) A cone-like bur mounted on a low-speed handpiece
- d) A round bur mounted on a low-speed handpiece

**18. For which phase of endodontic access, the following statement is correct: “The round bur enters the just-created opening in the chamber roof, is applied to the undercuts of dentin, and removes them on the way out.”**

- a) Enlargement phase
- b) Flaring phase
- c) Penetration phase
- d) Finishing phase

**19. For which phase of endodontic access, the following statement is correct: “This phase requires a non-end-cutting diamond bur, also called self-guiding bur, or Batt’s bur mounted on a high-speed handpiece.”?**

- a) Enlargement phase
- b) Penetration phase
- c) Localisation of orificies
- d) Finishing phase

**20. For which maxillary tooth you can say the following: “The canal is sometimes central, but is fissurelike; in which case, the canal is approached and prepared as though there were two, unless there is definitely only one”?**

- a) First premolar
- b) Second premolar
- c) Lateral incisor
- d) First molar

## **TEST 4**

### **CONTENTS OF CAVUM PULPAE AND ROOT CANALS.**

#### **HAND INSTRUMENTS (Barbed broaches) AND MACHINE-DRIVEN FILES FOR REMOVAL OF SOFT PULP TISSUE.**

##### **1. Barbed broaches are produced from:**

- a) a slightly conical, round metallic filament, which is twisted clock- wise-
- b) A slightly conical, round metallic filament, which is notched in such a manner as to create a “multiple barb”
- c) A slightly conical, round metallic filament, which is twisted counter clock- wise
- d) A parallel square metallic filament, which is notched in such a manner as to create a “multiple barb”

##### **2. Broaches are recommended to withdraw the pulp tissue in case the canal is:**

- a) Narrow and curved
- b) Narrow and straight
- c) Wide and straight
- d) Wide and curved

##### **3. The barbed broaches are designed to:**

- a) Work on canal walls
- b) To engage canal walls
- c) Use it with a filing motion
- d) To hook and twist the pulp filament around itself

##### **4. Broaches:**

- a) Tend to fracture easily
- b) Tend to be stable
- c) Tend to be flexible
- d) Tend to go beyond the apical curvature

##### **5. How the correct size of the barbed broaches must be chosen?**

- a) It must be wide enough to engage the pulp effectively, but not so thin as to touch the canal walls

- b) It must be narrow enough to engage the pulp effectively, but not so thin as to touch the canal walls
- c) It must be wide enough to engage the pulp effectively, but not so wide as to touch the canal walls
- d) It must be thin enough to engage the pulp effectively, but not so wide as to touch the canal walls

**6. The barbed broach should hook the pulp filament around itself for:**

- a) For two-thirds of its length
- b) For one-third of its length
- c) For full working length
- d) Hooking the pulp filament cannot be performed by barbed broach

**7. What is the graphical sign for barbed broach?**

- a) Square
- b) Triangle
- c) Circle
- d) Star

**8. Mark the odd one out:**

- a) The broach must never be used in narrow or calcified canals
- b) The broach must never be introduced into curved canals
- c) It is useless, as well as dangerous, to introduce it to the apex
- d) The broach must be introduced into curved portions of straight canals

**9. The barbed broach should be used in:**

- a) In canines known to have a single canal
- b) In the distal roots of the lower molars
- c) In the upper and lower first premolars
- d) In the palatal roots of the upper molars

**10. The correct technique for the use of the broach does not include:**

- a) Adequate isolation
- b) An adequate access cavity be prepared
- c) Dehydrated root canal
- d) The instrument is rotated at least 180°

**11. If the barbed broach engages the canal wall and is rotated:**

- a) The apical constriction will be enlarged
- b) Nothing will happen
- c) It will engage the pulp tissue
- d) Fracture will occur

**12. The Broaches have an elevated capability of:**

- a) Engaging the pulp tissue and at the same time of fracturing
- b) Engaging the pulp tissue and at the same time enlarging the apical constriction
- c) Engaging the pulp of cavum pulpa and at the same engaging the pulp tissue in the canals
- d) Enlarging the apical constriction and at the same time of fracturing

**13. How the barbed broach is manufactured and what Is the graphical sign?**

- a) It is milled and has star shape graphical sign
- b) It is milled and has circle graphical sign
- c) It is twisted and has star shape graphical sign
- d) It is milled and has circle graphical sign

**14. What is the true indication for using barbed broaches?**

- a) Large and curved canals
- b) Thin and straight canals
- c) Large and straight canals
- d) Only in multi- rooted teeth

**15. The barbed broaches must not be placed deeper than:**

- a) The level of the orifice
- b) Full working length
- c) Two thirds of the canal length
- d) One third of the canal length

**16. Pulp tissue that is necrotic or in an advanced state of degeneration:**

- a) Should not be achieved using irrigating solutions
- b) Cannot be removed with a broach
- c) Should be removed with a broach

d) Should not be achieved by the use mechanical action of the endodontic instruments

**17. For which hand instrument the following is true?- “The instrument should never come into contact with the canal walls.”?**

- a) H-file
- b) K- Reamer
- c) K-File
- d) Barbed broach

**18. For which hand instrument the following is true?” It is useless, as well as dangerous, to introduce it to the apex”?**

- a) H-file
- b) K- Reamer
- c) K-File
- d) Barbed broach

**19. Before using barbed broach, the canal should be:**

- a) Irrigated with sodium hypochlorite
- b) Irrigated with EDTA
- c) Dry enough
- d) Prepared to full forking length

**20. For which hand instrument the following is true?” Machined from a conical blank filament in steel creating numerous hooks as part of a blade which is at 45° along the shaft”?**

- a) H-file
- b) K- Reamer
- c) K-File
- d) Barbed broach

**TEST 5**  
**ROOT CANAL WORKING LENGTH**

**1. Working length is defined in the endodontic glossary as:**

- a) Distance from a coronal reference point to the anatomic apex of the tooth
- b) Distance from an orifice to the point at which canal preparation and obturation should terminate.
- c) Distance from a coronal reference point to the point at which canal preparation and obturation should terminate.
- d) Distance from an orifice to the anatomic apex of the tooth

**2. The..... is defined as the tip or end of the root determined morphologically.**

- a) Apical constriction
- b) Apical foramen
- c) Radiographic apex
- d) Anatomic apex

**3. The..... is the main apical opening of the root canal.**

- a) Apical constriction
- b) Apical foramen
- c) Radiographic apex
- d) Anatomic apex

**4. Apical foramen is:**

- a) The main apical opening of the root canal.it is frequently eccentrically located away from the anatomic or radiographic apex
- b) It is defined as the tip or end of the root determined radiographically
- c) It is defined as the tip or end of the root determined morphologically
- d) The narrowest part of the canal

**5. The narrowest part of the root canal is called:**

- a) Apical constriction
- b) Apical foramen
- c) Radiographic apex

d) Anatomic apex

**6. Cemento-dentinal junction (CDJ) and apical constriction:**

a) Do not always coincide

b) Always coincide

c) There is nothing in common between these two

d) Apical constriction is closer to the anatomical apex of the tooth

**7. The apical constriction is in the range of 0.5 to 1.0 mm from the:**

a) Radiographic apex

b) Orifice

c) Anatomic apex

d) External foramen

**8. A working length established beyond the minor diameter can cause:**

a) 3- dimensional obturation

b) Apical perforation and overfilling of the root canal system

c) Better medication and higher reducing of microorganisms

d) Inadequate debridement

**9. A working length established short of the minor diameter leads to:**

a) Inadequate debridement

b) 3- dimensional obturation

c) Better medication and higher reducing of microorganisms

d) Apical perforation and overfilling of the root canal system

**10. Electronic apex locators:**

a) Increase the radiation dose and treatment time

b) Are particularly non useful when the apical portion of the canal is obscured by anatomic structures

c) The major disadvantages are that they operate in an electro conductive environment in the presence of pus and pulpal tissue remnants

d) Are based on the principle that there is a maximum difference of impedance between electrodes depending on the frequencies used.

**11. Advantages of apex locators are:**

a) The magnitude of the impedance of the canal is influenced by the electrolytes present inside the canal

- b) They have limitations in teeth with wide open apex
- c) It requires a special device and accuracy is influenced by electrical condition of canal.
- d) Artificial perforation can be recognized

**12. Disadvantages of apex locators are:**

- a) Artificial perforation can be recognized
- b) The magnitude of the impedance of the canal is influenced by the electrolytes present inside the canal
- c) Supposedly accurate
- d) Metallic restorations and heavily calcified canals cannot interfere with electrical conductivity

**13. With an electronic method of determining working length one can always detect electrically the point where the file tip is in contact with the periapical tissue:**

- a) Even if the apical foramen is located away from the anatomic apex
- b) Only if the apical foramen coincides with the anatomic apex
- c) Only if the apical foramen coincides with the radiologic apex
- d) Even if the apical foramen is located away from the apical constriction

**14. Optimal working length is found by subtracting approximately ..... from the length obtained with the apex locator.**

- a) 0.0 mm
- b) 0.5 mm
- c) 1.2 mm
- d) 1.00 mm

**15. There is potential for interference of an electronic apex locator with:**

- a) Machine- driven endodontic instruments
- b) Patient with diabetics
- c) Patient on chemo- therapy
- d) Patient's cardiac pacemaker function

**16. Tactile sensation in measuring the working length of root canals:**

- a) Must be confirmed may radiographic or electronic methods
- b) Is a precise method
- c) Its accuracy doesn't depend on sufficient experience
- d) Should not be confirmed may radiographic or electronic methods

**17. Periodontal Sensitivity:**

- a) Detects an increase in resistance as the file approaches the apical 2 to 3 mm
- b) Meets the ideal method of determining WL
- c) Method of working length determination, based on the patient's response to pain
- d) Although it may appear to be very simple, its accuracy depends on sufficient experience

**18. The reference point:**

- a) The reference point is the site on the occlusal or incisal surface from which measurements are made
- b) It is not necessary to be stable but should be easily visualized during preparation
- c) Different reference points should be used for all canals in multirooted teeth
- d) Marginal ridges or the floor of the chamber, are reliable to use for the purpose

**19. If the reference point during endodontic treatment is undermined cusp, it should be:**

- a) We do not perform endodontic treatment of teeth with undermined cusps
- b) Protected very carefully
- c) Reduced considerably before access preparation
- d) Reduced or saved, but a new reference point should be made- the underlying fissure

**20. Mark the odd one out:**

- a) No individual method is truly satisfactory in determining endodontic working length
- b) Modern apex locators can determine this position with accuracies greater than 90% but with some limitations
- c) Combination of methods should be used to assess the accurate working length determination
- d) Electronic apex locators increase the radiation dose and treatment time

## TEST 6

### HAND ENDODONTIC INSTRUMENTS FOR CLEANING AND SHAPING OF THE ROOT CANAL. WORKING TECHNIQUE.

**1. What stands after D1?**

- a) The diameter at the end of the cutting edge
- b) The diameter of the tip of the instrument
- c) The natural diameter of the apical foramen
- d) The diameter of each twist of K files

**2. What stands after D16?**

- a) The diameter at the end of the cutting edge
- b) The diameter of the tip of the instrument
- c) The natural diameter of the apical foramen
- d) The diameter of each twist of K files

**3. In all instruments with taper .02, the difference of the diameters D1 and D16 is:**

- a) Variable in standard K- files and standard H files
- b) Always variable
- c) Always a constant 0.42 mm
- d) Always a constant 0.32 mm

**4. What stands after taper .02?**

- a) The diameter of D1 is 2mm
- b) The increment in diameter is 2 mm x each millimeter of length
- c) The increment in diameter is 0.02 mm x each millimeter of length
- d) The diameter of D1 is 0,2mm

**5. The D1 /D16 distance is:**

- a) Constant 16mm
- b) Constant 21mm
- c) Variable from 16 to 21mm
- d) Variable from 16 to 31mm

**6. The endodontic instrument with red color is:**

- a) #10
- b) #15
- c) #20
- d) #25

**7. In cross- section a K-File has:**

- a) Quadrangular design
- b) Pentagonal design
- c) Round design
- d) Triangular design

**8. The K-Flex file is:**

- a) A H-File with the cutting aggression of a K- file
- b) A K-File with the cutting aggression of a Hedstroem file
- c) None of the above

**9. The K-flex file has:**

- a) A rhomboidal cross-section
- b) A triangular cross- section
- c) A square cross- section
- d) Pentagonal cross-section

**10. K- reamers are not contraindicated in case of:**

- a) Curved root canals
- b) We use them for initial exploration
- c) Necessity of filing motion
- d) Necessity of rotation

**11. Mark the odd one out: Hedstroem files:**

- a) Are used with a filing motion
- b) Are milled
- c) Are for scouting the root canal
- d) Have round cross- section

**12. The Hand GT Files:**

- a) Have counterclockwise blade direction
- b) Have clockwise blade direction
- c) Must be rotated in a clockwise direction
- d) Have cutting tip

**13. The endodontic instrument with black color is:**

- a) #10
- b) #35
- c) #20
- d) #40

**14. The endodontic instrument with green color is:**

- a) #10
- b) #20
- c) #30
- d) #35

**15. K- files:**

- a) Are used for primary scouting of the root canals
- b) Have round cross section
- c) May be used only with a filing motion

**16. K- files have:**

- a) Cutting edge
- b) Non- cutting edge
- c) Triangular cross section
- d) Round cross section

**17. Mark the odd one out: Reamers:**

- a) Are generally obtained by twisting a steel
- b) Have triangular or quadrangular cross-section.
- c) Have less spirals per mm when compared to K-file
- d) Should not be rotated inside the root canal

**18. Hedstroem files:**

- a) Should be used with a filing motion
- b) Should be used with a Roans balanced force
- c) Should be used with a watch and wind motion
- d) Should be used with 360- degree rotation

**19. The K- Reamers have:**

- a) Quadrangular cross section
- b) Triangular cross section
- c) May have both quadrangular and triangular cross section
- d) Round cross section

**20. Hedstroem files:**

- a) Are gentle to root dentinal walls
- b) Are particularly aggressive when using the push and pull motion
- c) Are most suitable for initial scouting of the root canal
- d) Have 45 degreeed cutting angles

## TEST 7

### **MACHINE DRIVEN INSTRUMENTS FOR CLEANING AND SHAPING OF THE ROOT CANAL SYSTEM – TYPES, INDICATIONS. WORKING TECHNIQUE.**

**1. The Gates-Glidden drills:**

- a) Are designed with the weakest point at the start of the shank
- b) Are designed to prepare the apical foramen of the root
- c) Are Ni-Ti instruments
- d) Are marked with colourful handles

**2. The difference between Gates- Glidden and Largo drills is:**

- a) The material they are made of
- b) The handpiece they need to rotate
- c) The spread of the blades over the surface
- d) The tip of the instrument- cutting of non- cutting

**3. What is the difference between Largo drills and Peeso Reamers?**

- a) The cutting tip
- b) The material they are made from
- c) The spread of the blades over the surface
- d) They are one and the same

**4. SC Quantec should be used in:**

- a) Canals with wider curves
- b) Narrow, calcified canals
- c) Canals with severe apical curvatures
- d) Only straight and wide canals

**5. SX Quantec should be used in:**

- a) Narrow canals
- b) Canals with wider curves
- c) Only straight and wide canals
- d) Calcified canals

**6. LightSpeed machine- driven instruments:**

- a) Are very similar to the Gates Glidden drills
- b) Are made without a point of separation
- c) The length of the working part varies from 16 to 21 mm.
- d) Must be used with coronal- apical technique

**7. Rotary GT Files:**

- a) Have a cutting tip
- b) The blade direction is counter- clockwise
- c) Have blades that are classical “radial lands” without the sharp cutting angles
- d) Have single taper

**8. The clockwise direction of the blades and the radial cutting planes of GT Rotary Files:**

- a) Make them specific only for wide and straight canals
- b) Are extremely dangerous to screw in
- c) Make it possible to use continual clockwise rotation without screw in
- d) Need filing motion

**9. The taper of the GT System is:**

- a) .02
- b) .04
- c) .06
- d) .08

**10. For which system the following statement is accurate? “has a cross- section of 3 radial tires (radial lands), the first of which lends support to the blade and guarantees an increased resistance to torsional stress of the peripheral zone, the second which is retracted reduces the friction against the canal walls and the third stabilizes the instrument and keeps it centred inside the canal avoiding excessive load.”**

- a) K- Files
- b) GT Hand Files
- c) GT Rotary files
- d) K3

**11. Which one is with non- cutting tip?**

- a) K-file
- b) K3
- c) GT file

**12. Before using machine driven systems it is advisable to:**

- a) Shape the apical foramen with Gates Gliden Drills
- b) Explore and preflare with hand instruments up to file size 40
- c) Explore and preflare with hand instruments up to file size 15
- d) Fully shape the canal to full working length

**13. The ProTaper Universal is made up of instruments that are divided into 2 groups:**

- a) Shapers and finishers
- b) Orifice openers and shapers
- c) Orifice openers and finishers
- d) Shapers and obturators

**14. In Pro Taper Universal the ..... are instruments for eliminating coronal interferences and to create a smooth pathway:**

- a) Orifice openers
- b) Shapers
- c) Finishers
- d) Obturators

**15. In Pro Taper Universal the ..... are meant for the finalizing of the shape and for giving a definitive taper and diameter to the canal:**

- a) Orifice openers
- b) Shapers
- c) Finishers
- d) Obturators

**16. For which system the following statement is accurate: “ has robust triangular cross-section with convex sides to increase the metal mass of the central core resistance of the instruments”?**

- a) Pro Taper

- b) GT
- c) K3
- d) K- files

**17. The taper of Pro Taper is:**

- a) .02
- b) .04
- c) .06
- d) Progressively tapered design

**18. The ProTaper Sx-file is for:**

- a) Shaping the coronal 1/3rd
- b) Shaping the whole root canal
- c) Finishing the final shape and taper
- d) Preparing the apical foramen

**19. WAVEONE NiTi files are available in:**

- a) 3 sizes: small, primary and large
- b) 3 series: 20,30,40
- c) 6 instruments in 2 groups: shapers and finishers
- d) 6 instruments: one orifice opener, 2 shapers and 3 finishers

**20. Wave One system needs:**

- a) A rotary endodontic handpiece
- b) A reciprocating endodontic handpiece
- c) Handle for hand use
- d) Apex locator

## TEST 8

### TECHNIQUES FOR ROOT CANAL PREPARATION.

**1. Mark the odd one out: One should remove..... from the root canal system during the cleaning procedure.**

- a) Fragments of pulp tissue
- b) The microorganisms and their toxins
- c) All the infected material that may be contained within
- d) All the moisture and irrigants

**2. The endodontic instruments should give the canal such a shape that:**

- a) The whole canal should be ovoid
- b) It can be obturated immediately without the need of irrigation
- c) The space obtained within may then be easily filled three-dimensionally
- d) The taper of the canal is bigger than 2%

**3. The shape to be given to the root canal depends on:**

- a) Our choice of endo instruments
- b) The obturation technique that will be used subsequently
- c) The age of the patient
- d) The tooth group

**4. During the shaping of the root canal, the dentin must be removed in such a way that the final shape of the preparation is:**

- a) Ovoid in all parts of the root canal
- b) A truncated cone
- c) A cylinder
- d) As big in the apical part as in the coronal one

**5. A circular section of the root canal after preparation is desirable, but.....:**

- a) Only in case of incisors
- b) Cannot be achieved
- c) Is never achieved in practice without destroying the tooth, especially in the most coronal portion of the root canal
- d) Can be achieved only in ovoid or flattened roots

**6. The truncated cone shape of the root canal can be achieved:**

- a) With respects the original anatomy
- b) But the tooth should be destroyed, especially in the most coronal portion of the root canal
- c) Only in maxillary incisors
- d) Almost never with endodontic instruments

**7. The truncated cone shape does not permit:**

- a) Better contact between the endodontic instruments and dentinal walls
- b) Better removal of all the pulp debris
- c) Better penetration of the irrigating solutions
- d) Better cleaning without the need of irrigants

**8. The transverse diameters of the tapering cone preparation diminish in:**

- a) A corono-apical direction
- b) An apico-coronal direction
- c) Should not diminish
- d) The middle 1/3<sup>rd</sup> of the root canal

**9. The conicity of the root canal must:**

- a) Exist in a single plane
- b) Must give a sense of “flow.”
- c) Be greater than 4%
- d) As small as possible

**10. The enlargement of root canal must:**

- a) Result in as bigger taper as possible
- b) Follow the idea of ovoid root canal
- c) Respect the original anatomy of the root canal
- d) Try to straighten the curvatures especially in apical one- third

**11. The apical foramen should:**

- a) Be transported in means of straightening the curvatures
- b) Be preserved in its original position and shape
- c) Be preserved in its original size and diameter

d) Be transported in means of removing delta-kind of foramen apicale

**12. External transportation does not mean:**

- a) Formation of an elliptical foramen apicale
- b) Formation of a teardrop foramen apicale
- c) Direct perforation
- d) Transportation of the apical foramen within the root canal

**13. Direct perforation occurs when using:**

- a) H-files
- b) Straight, large size instruments in curved canals
- c) Machine driven instruments
- d) Small size instruments in straight canals

**14. Internal transportation means:**

- a) Transportation of the apical foramen within the root canal
- b) Formation of an elliptical foramen apicale
- c) Formation of a teardrop foramen apicale
- d) Direct perforation

**15. .... is called when one is working intentionally or inadvertently “short” without being concerned with keeping patent the most apical portion of the canal.**

- a) External transportation
- b) Internal transportation
- c) Formation of an elliptical foramen apicale
- d) Direct perforation

**16. For which iatrogenic error the following is about: “a ledge was initially created, which was then deepened until the periodontal ligament was encountered.”?**

- a) Direct perforation
- b) Ledge formation
- c) Internal transportation
- d) External resorption

**17. “The apical foramen must be kept as .....as practical, in order to obtain a better**

**seal and to prevent extrusion of the gutta-percha filling.**

- a) Large

- b) Small
- c) Wide
- d) Unprepared

**18. The apical foramen of a naturally wide canal should be:**

- a) Cleaned, without any enlargement
- b) Should not remain the same original shape and size
- c) Cleaned and enlarged to at least ISO #80
- d) Depends of the age of the patient

**19. Foramina already wider than a # ..... file only need to be cleaned and don't need to be shaped or enlarged at all:**

- a) 20
- b) 30
- c) 40
- d) 50

**20. Which of the following techniques may create continuously tapering preparation of the root canal?**

- a) Filing
- b) Balanced force
- c) Step back
- d) Standard

## TEST 9

### CHARACTERISTICS OF THE PREPARED ROOT CANAL AND ROOT CANAL MEDICATION.

**1. Precurvature of the endodontic file is:**

- a) Needed only when there is a radiological sign of a curvature of the root
- b) Is not needed when dealing with roots that are, to all appearances, straight
- c) Necessary and must always be done
- d) May lead to formation of edges and false canals

**2. What will happen if a non-precurved reamer is introduced into a curved canal?**

- a) Will not follow the canal curvature
- b) Will produce an “hour-glass” effect in the canal
- c) Won't be able to enter the canal
- d) Will make a direct perforation

**3. “The same working length can be maintained consistently throughout the entire process of cleaning and shaping....”:**

- a) By using an endodontic ruler
- b) By using a rubber stop
- c) By using K-files
- d) By using the same files during the preparation phase

**4. All instruments must be equipped with....., which are used to regulate their working length.**

- a) Rubber stops
- b) Endodontic ruler
- c) ISO- standardization
- d) Coloured handles

**5. For safety reasons, the first instruments to be placed in a canal should be:**

- a) H-file
- b) K-file
- c) K-reamer

d) Machine driven Ni-Ti instrument

**6. The first instrument to be introduced inside the canal is:**

a) Very small # 08 or # 10

b) Small # 15 or # 20

c) Depends on the tooth

d) Depends on the age of the patient

**7. If one senses an obstacle in the canal:**

a) One must extract it from the root canal, give it a greater degree of precurvature at its tip

b) One should force the instrument in the root canal in an attempt to overcome it

c) One should prepare the canal only till the obstacle instead on full working length

d) One should drill the obstacle with a thin diamond bur

**8. Forcing the small instrument into the root canal to reach the apex can cause:**

a) Faster negotiation with the canal

b) Bending and fracture of the instrument

c) Reduction of calcifications from the canal walls

d) Smaller possibility of creation of ledges, false canals, or perforations

**9. The instrument is withdrawn from the canal only after:**

a) It has created enough space around itself, so that it is “loose” within the canal

b) It reaches full working length

c) It reaches the level of the curvature

d) We feel the apical constriction

**10. Instrumentation and root canal obturation must stop at the level of:**

a) Radiographic apex

b) Anatomical apex

c) Curvature

d) Apical constriction/ Cemento-enamel junction

**11. If one wants to consider the choice of the radiographic terminus of the canal to be approximate it cannot be considered any more approximate than the choice of staying:**

a) 0.5 mm- 1 mm short of the radiographic apex

b) 0.5 mm- 1 mm more of the radiographic apex

- c) 0.1mm-0.2mm short of the radiologic apex
- d) 0.1mm-0.2mm more of the radiologic apex

**12. Maintaining the terminus of the canal patent does not avoid:**

- a) Blockages
- b) Ledges
- c) Perforations
- d) Breakage of instruments

**13. The Gates-Glidden drill can be used within the canal:**

- a) After it has been sufficiently enlarged by the hand instruments
- b) That is still narrow
- c) At first immediately after find the orifices
- d) They are not in use in endodontics

**14. After the last rinse with EDTA has been carried out, one rinses with .....to neutralize the acid and the canals are then dried.**

- a) Sodium hypochlorite
- b) Hydrogen peroxide
- c) Distilled water
- d) EDTA should be the last irrigant introduced

**15. The purpose of drying is to remove all the moisture not only in the canal but also:**

- a) From cavum pulpae
- b) From the gingival sulcus
- c) From inside the dentinal tubules
- d) From the periapical tissues

**16. In order to achieve drying result, it is not enough to only utilize paper points. A rinse with pure.....is carried out so as to dilute the watery content of the hypochlorite.**

- a) Alcohol
- b) Hydrogen peroxide
- c) Destillated water
- d) Acid

**17. Do not begin endodontic therapy until:**

- a) A recent and up-to-date preoperative radiograph is available

- b) You are not ready with mixing the paste or sealer for obturation
- c) You prepare all the paper points you will need
- d) The tooth is still painful but wait for the symptoms to go away and then ask the Patient to come back to you

**18. In multirooted teeth, one always performs the cleaning and shaping:**

- a) Of one canal at a time
- b) Only in the canals whose orifices one can find
- c) Of all canals at once with the first instrument, then proceed to the next instrument For all the canals etc.
- d) Always start from the most difficult

**19. The instrument's working length must always be checked:**

- a) Electronically first and then radiographically
- b) Radiographically first and then electronically
- c) The sequence does not matter
- d) First tactile and then radiographically

**20. .... are the only instruments capable of locating the apical foramen.**

- a) Apex- locators
- b) K-files
- c) Machine driven Ni-Ti instrument
- d) Probes

## TEST 10

### ROOT CANAL OBTURATION – DEFINITION, GOALS, MEANS, METHODS.

**1. The ultimate objective of the root canal therapy is the:**

- a) Three-dimensional hermetic obturation
- b) Devitalisation of the pulp
- c) Removing of all old obturation contents
- d) Irrigation with as many irrigants as possible

**2. The purpose of obturation is:**

- a) To be able to see good radiological image of the canal/s
- b) To fill the canals and cavum pulpaе in order to have a stable base for the future restoration
- c) To seal all “portals of exit” to impede any sort of communication between the endodontium and periodontium
- d) To place powerful antibiotic or corticosteroid inside do disinfect the area

**3. Most endodontic failures are related to:**

- a) Incomplete obturation of the endodontium
- b) Not properly made X-ray trough parallel technique
- c) Not using Ni-Ti machine driven instruments
- d) Using a needle with a lateral opening for the irrigating protocol

**4. There is a “hollow tube theory,” according to which:**

- a) An empty space within a living organism tends to fill with tissue fluids in A short period of time
- b) As hollow the dentinal tubules around the master canal are as greater seal, we can achieve with the obturation techniques
- c) All the lateral hollow canals should be obturated in order to have reall hermetic and 3-dimensional obturation
- d) If the canal is well medicated it is not obligatory to obturate the canal

**5. “Anachoresis” in endodontics is concerning to:**

- a) Fluids that accumulate within empty spaces of the canal are rapidly colonized by bacteria
- b) The ability of endodontic files to reach the physiological apex of the root
- c) The work of the apex locator in retreatment cases

d) The drying effect of paper points with bigger taper than .02

**6. Fluids that accumulate within empty spaces are rapidly colonized by bacteria which reach these spaces by means of a phenomenon of:**

- a) Lateral condensation
- b) Vertical impaction
- c) Anachoresis
- d) Periodontitis

**7. The practice of Endodontics based on chemotherapy, antimicrobial agents, and mummifiers:**

- a) Is a contemporary practice
- b) Is out-dated
- c) Is based on the most recent scientific studies
- d) Should be used only in specialized endodontic practices

**8. According to early authors there are fundamental principles for the success of endodontic therapy and the elimination of periapical inflammation. They are:**

- a) Enlargement, cleaning, and filling
- b) Chemotherapy, antimicrobial agents, and mummifiers
- c) Preparing of the canals, placing chemotherapy agents for long term medication, mummification
- d) Enlargement, mummification, filling

**9. The use of medicated pastes to sterilize and seal the root canals must therefore now be considered:**

- a) Scientifically proven
- b) Practice proven
- c) Anachronistic
- d) Contemporary

**10. Mark the odd one out: Requirements for the ideal root canal filling material are:**

- a) To be bacteriostatic
- b) To be non-irritating
- c) To be able to sterilize the canal
- d) To be non-resorbable for an indefinite period of time

**11. Mark the odd one out: Requirements for the ideal root canal filling material are to:**

- a) Be easily manipulated
- b) Be a conductor of thermal changes
- c) Be sterile or serializable
- d) Be easily removable from the root canal, if necessary

**12. Pastes as an obturating material in endodontics are:**

- a) Used to fill the entire canal
- b) Used to seal the apical foramen
- c) Used to seal the orifices
- d) Used to adhere the gutta-percha cones to each other

**13. Biologically, it would be desirable to fill the entire canal with:**

- a) A solid or semisolid material
- b) A paste
- c) A sealer
- d) Paper points

**14. The cement or “sealer” must be used in minimal amounts, since it:**

- a) Must only improve the adaptation to the canal walls of the gutta-percha
- b) May be extremely toxic
- c) Has powerful antibacterial properties
- d) Increases the inner pressure inside the canal

**15. The weakest part of the obturation of a root canal is:**

- a) The cement
- b) The gutta-percha
- c) The paper points
- d) The obturator

**16. Mark the odd one out: Cements for obturation of root canals must:**

- a) Be used as the only canal filling material
- b) Be used in minimal amounts
- c) Be used for the apical seal, together with solid material

d) Be used for apical seal together with semi- solid material

**17. A semi-solid material for obturation of root canals is:**

a) Gutta-percha

b) Silver cone

c) Paper point

d) Sodium Hypochlorite

**18. Once the gutta-percha is..... , it can be compacted against the canal walls in such a way as to eliminate and collapse any voids present in commercial gutta-percha:**

a) Softened by heat

b) Soften by irritant solutions

c) Softened by distilled water

d) Soften by cold

**19. Primarily constituted of zinc oxide, gutta-percha is in practice a .....material.**

a) Non-resorbable

b) Resorbable

c) Water absorbing

d) Acid absorbing

**20. Gutta-percha is readily sterilisable with:**

a) Immersion in 5.25% sodium hypochlorite for 60 seconds

b) Immersion in 3% hydrogen peroxide for 15 min

c) Immersion in 90% alcohol for 40 seconds

d) Sterilisation in autoclave for 1 hour

## TEST 11

### ROOT CANAL FILLING MATERIALS – PASTES THAT HARDEN INSIDE THE ROOT CANAL – CLASSIFICATION.

- 1. The metallic, rigid, conical and smooth instrument used for lateral condensation is called:**
  - a) Spreader
  - b) Plugger
  - c) Probe
  - d) Lentulo
- 2. The gutta-percha cone that fits well to the apical preparation in lateral condensation is called:**
  - a) Master cone
  - b) Auxiliary cone
  - c) Spreader
  - d) Paper point
- 3. How many auxiliary cones are needed in case of lateral condensation?**
  - a) 1 master cone
  - b) 1 auxiliary cone
  - c) In canines 3 auxiliary cones
  - d) As many as needed for a dense filling
- 4. Lateral condensation is a:**
  - a) Cold method
  - b) Hot method
  - c) Depends on whether you use heat or not
  - d) Neither cold nor hot
- 5. Filling of the lateral canals when using lateral condensation occurs:**
  - a) Less frequently than when vertical condensation is performed
  - b) Always constituted of gutta-percha, never sealer
  - c) More frequently than when vertical condensation is performed
  - d) Depends on the amount of cement used

**6. When using thermoplastic gutta-percha, it is conveyed through a:**

- a) Thin silver needle
- b) Thin gold needle
- c) Plastic needle
- d) Ni-Ti needle

**7. When using thermoplastic gutta-percha, it means:**

- a) We do not need any sealer
- b) We still need a sealer
- c) We do not need to irrigate
- d) We use master cone and auxiliary cones

**8. The needle of the syringe for thermoplastic gutta-percha must be positioned no less than .....from the end of the preparation:**

- a) 4-6 mm
- b) 0 mm
- c) 8 mm
- d) 8-10 mm

**9. It is important to apply vertical pressure during cooling to compact the gutta-percha because:**

- a) Of diminution of volume in the recrystallization phase
- b) Of our aim to seal the apical foramen
- c) Of need to obturate lateral canals
- d) It is contraindicated to apply vertical pressure during cooling phase

**10. One should inject small amounts of gutta-percha at the time when obturating root canals to fill no more than ..... each time.**

- a) 5 mm
- b) 1 mm
- c) 3 mm
- d) 0,5 mm

**11. For chemical softening of gutta-percha is used:**

- a) Chloroform
- b) Ethanol

- c) Hydrogen peroxide
- d) Lemon acid

**12. Eucalyptol is used as a substitution to:**

- a) Chloroform
- b) Eugenol
- c) Calcium hydroxide
- d) Hydrogen peroxide

**13. Eucalyptol is used:**

- a) As substitution of chloroform
- b) As an irrigant
- c) As a root canal cement
- d) As a long- term medication inside the root canal

**14. Resilon is:**

- a) A material for adhesive obturation of root canals
- b) An irrigant
- c) Used for long-term medication of root canals
- d) Type of machine-driven file

**15. Resilon allows the creation of:**

- a) A solid “Monoblock”
- b) The “perfect” irrigant
- c) Clean operative field
- d) Stable post-endodontic restoration

**16. The disadvantage of gutta- percha is:**

- a) Possibility of microleakage
- b) Toxic
- c) Non- biocompatible
- d) Not thermoplastic

**17. Gutta- percha:**

- a) Do not adhere to canal walls
- b) May be toxic

- c) Is non- biocompatible
- d) Cannot be thermoplastic

**18. Spreader should be used with:**

- a) Lateral movement
- b) Apical movement
- c) Coronal movement
- d) Mesial movement

**19. Spreader is used for:**

- a) Lateral condensation
- b) Vertical condensation
- c) Thermoplastic gutta-percha
- d) Irrigation

**20. What is the drawback of lateral condensation?**

- a) The gutta-percha cones never merge into a homogeneous, compact mass
- b) The need of auxiliary cones
- c) The need of lentulo
- d) The source of heat needed

## TEST 12

### OBTURATION OF THE ROOT CANAL SYSTEM WITH GUTTA-PERCHA AND ADHESIVE SYSTEMS.

1. **Pluggers are:**

- a) Referred to as compactors
- b) Touch the dentinal walls in order to make space for the auxiliary cones
- c) Used for better penetration of the irrigant inside the lateral canals
- d) K- files made of Ni-Ti

2. **In vertical compaction the metal instruments:**

- a) Never touch the canal walls
- b) Touch the dentinal walls in order to make space for the auxiliary cones
- c) Should be twisted clock- wise in order to have a 3D obturation
- d) Should not be heated because heat may traumatise the periapical tissues

3. **What is the difference between “spreaders” and “heat carriers”?**

- a) Spreader does not use heat and it is used for cold lateral condensation
- b) Spreader does not use heat and it is used for cold vertical condensation
- c) Heat carriers touch the dentinal walls in order to make space for the auxiliary cones
- d) Are referred to as compactors

4. **The heat for vertical condensation should not be delivered by:**

- a) Alcohol burners
- b) Bunsen burner
- c) Flameless heat source
- d) Electric device

5. **Gutta-percha cones indicated for warm vertical condensation are:**

- a) Tapered ones
- b) Standardized ones
- c) 35/.06
- d) 40/.04

6. **What is the quantity of sealer needed for warm vertical condensation?**

- a) About 0,25ml per canal
- b) About 0,1 ml per canal
- c) As a microfilm a few microns in thickness
- d) We must fill the canal with sealer using lentulo

7. **The sealer should not be:**

- a) Inert
- b) Biocompatible
- c) Shrinking
- d) Non resorbable

8. **To facilitate control of the working depth of the pluggers, the instruments can be equipped with:**

- a) Ruler
- b) Rubber stops
- c) Spreader
- d) Gutta-percha

9. **The canals ready for vertical condensation must always be:**

- a) Dried with sterile absorbent paper points
- b) Filled with lubricant
- c) Filled with EDTA
- d) Filled with cement using lentulo

10. **The cone for warm vertical condensation should:**

- a) Be slightly shorter than the preparation
- b) Be slightly longer than the preparation
- c) Be as long as the preparation is
- d) Reaches the anatomical apex of the tooth

11. **The cone for warm vertical condensation should:**

- a) Be loose in the root canal
- b) Not be loose in the root canal
- c) Be slightly longer than the preparation

12. **How much must the cone be shortened with respect to the canal preparation when obturating via warm vertical condensation in case of wide, straight root canals?**

- a) At least 1-2 mm
- b) At least 0,2-0,3 mm
- c) At least 3-4 mm
- d) It should not be shortened

13. **How much must the cone be shortened with respect to the canal preparation when obturating via warm vertical condensation in case of narrower, curved canals?**

- a) At least 1-2 mm
- b) At least 0,2-0,3 mm
- c) Only a few fractions of millimetre
- d) It should not be shortened

14. **How can you prevent the gutta-percha cone to bent on withdrawal?**

- a) By checking the entry of the cone into the canal opening with a mirror
- b) By picking the right size of the cone
- c) By picking the right taper of the cone
- d) By placing a little bit of a sealer at the tip of the cone

15. **When performing warm vertical condensation, the gutta-percha cone must:**

- a) Be shortened so that its apical diameter is of the same size as the apical foramen
- b) Be shortened so that its apical diameter is wider than the apical foramen
- c) Be shortened so that its apical diameter is thinner than the apical foramen
- d) Be longer so that its apical diameter may go through the apical foramen of the tooth

16. **The pluggers must be prefitted into the canal to:**

- a) Determine the depth to which they can be introduced without touching the dentinal walls
- b) Determine the depth to which they can be introduced with strict contact with the dentinal walls
- c) Reach full working length
- d) Determine the right taper of the plugger

17. **When using pluggers in warm vertical condensation one always begins with a sufficiently..... plugger, which descends in the coronal one third of the canal.**

- a) Wide
- b) Thin
- c) Rigid
- d) Flexible

18. **At the final step of warm vertical condensation, one advances prefitting a third, narrower plugger, which descends into the apical one third until about .....from the apical foramen.**

- a) 5 mm
- b) 1 mm
- c) 2 mm
- d) 0,1 mm

19. **Down- packing is a term that is concerned with:**

- a) Warm vertical condensation
- b) Cold lateral condensation
- c) Warm lateral condensation
- d) Cold standard single cone- technique obturation

20. **Which step is first- down-packing or back- packing?**

- a) Down- packing
- b) Back- packing
- c) Depends on the curvature of the canal
- d) Depends on the device we are equipped with

## TEST 13

### RESTORATION OF ENDODONTICALLY TREATED TEETH.

**1. Endodontically treated teeth are:**

- a) Structurally different from vital teeth
- b) Structurally not different from vital teeth
- c) Stronger than vital teeth because of the root canal obturation and if a metal post cemented
- d) Stronger than vital teeth because of rigid metal post cemented

**2. The loss of pulpal vitality is accompanied by:**

- a) Difference in collagen cross-linkage
- b) Decrease in compressive and tensile strength values
- c) Slight change in tooth moisture content
- d) A change in bonded water but not in free water

**3. The largest reduction in tooth stiffness results from:**

- a) Difference in collagen cross-linkage
- b) Decrease in compressive and tensile strength values
- c) Additional preparation, especially the loss of marginal ridges
- d) Slight change in tooth moisture content

**4. Colour change and darkening of non-vital teeth may not be a result from:**

- a) Inadequate cleaning and shaping can leave necrotic tissue in coronal pulp horns
- b) Root canal filling materials retained in the coronal aspect of anterior teeth
- c) Opaque substances
- d) The lost vitality of the tooth

**5. How can you prevent colour change and darkening of non-vital teeth?**

- a) By cleaning all material residues in the pulpal chamber and access cavity
- b) By using only cement without gutta-percha
- c) By using only gutta-percha without cement
- d) By obturating up to 5mm before the level of the orifice

**6. Restorations of endodontically treated teeth are not designed to:**

- a) Protect the remaining tooth from fracture,
- b) Prevent reinfection of the root canal system,
- c) Replace the missing tooth structure
- d) Changing of the crown of the tooth

**7. When a minimal amount of coronal tooth structure has been lost after endodontic therapy?**

- a) A direct resin composite restoration may be indicated
- b) An indirect composite restoration may be indicated
- c) An indirect ceramic restoration may be indicated
- d) An indirect post and core restoration may be indicated

**8. A direct composite restoration may be appropriate after endodontic therapy in case of:**

- a) MOD- cavity
- b) Root above the level of gingiva
- c) Root below the level of gingiva
- d) Frontal teeth with lost tooth structure beyond the endodontic access preparation

**9. When a significant amount of coronal tooth structure has been lost by caries, restorative procedures, and endodontics a restoration of choice should be:**

- a) Inlay
- b) Direct resin restoration
- c) Crown
- d) Endo-crown

**10. The cementation of a post inside the root canal is necessary to provide:**

- a) Retention for the core material
- b) Sustainability of the root
- c) Rigidity of the root
- d) 3D hermetic sealing of the root canal

**11. The flexibility of a post depends on:**

- a) Modulus of elasticity of the post's material
- b) The taper of the instruments we have used to prepare the canal
- c) The method of choice of the obturation of the root canal

d) How deep in the canal the post is cemented

**12. In case of non-adhesive cementation, the intracanal part of the post should be:**

- a) Two thirds the length of the canal
- b) One half the length of the canal
- c) One thirds the length of the canal
- d) As narrow as possible

**13. In case of adhesive cementation, the intracanal part of the post should be:**

- a) One third the length of the canal
- b) Two thirds the length of the canal
- c) As deeply placed as Pessio instrument allows us
- d) As narrow as possible

**14. The inherent strength of the tooth and its resistance to root fracture comes mostly from:**

- a) The post type cemented
- b) The post cemented and its length
- c) The remaining tooth structure and the surrounding alveolar bone
- d) The quality of root canal obturation

**15. When cementing a post with luting cements it is contraindicated to use endodontic irrigants such as sodium hypochlorite, hydrogen peroxide, or their combination, because:**

- a) They are strong oxidizing agents
- b) They are too aggressive to the root canals obturation
- c) They are only to be used in hollow root canals
- d) They speed up the polymerization of the luting cements

**16. Photopolymerization of resin-based cements for posts is often necessary to:**

- a) Maximize strength and rigidity
- b) Speed up the polymerization process
- c) To achieve better strength
- d) To improve the aesthetics

**17. What material is preferable for cementation of post- GIC or RMGIC?**

- a) GIC because of their ease of manipulation, chemical setting, and ability to bond to both tooth and post
- b) RMGIC because of their dual polymerization reaction
- c) RMGIC because of their ability to expand after polymerization
- d) Neither is suitable

**18. Zinc phosphate cement is mostly used for:**

- a) Cementation of metal posts
- b) Cementation of fiber posts
- c) Sealing of the root canal
- d) As a substitute to resin composite material for post- endodontic restoration

**19. Disadvantage of post and core system for post- endodontic restoration is:**

- a) Core is an integral extension of the post
- b) Core does not depend on mechanical means for retention on the post
- c) Tooth structure must be removed to create a path of insertion or withdrawal
- d) It is a method of choice for remaining roots above the level of gingiva

**20. Disadvantage of composite core resins is:**

- a) Adhesive bonding to tooth structure
- b) Rapid setting
- c) Translucent or highly opaque formulations
- d) Non adhesive bonding to metal posts

## TEST 14

### ERRORS AND COMPLICATIONS IN PROCESS OF ENDODONTIC TREATMENT.

**1. The main goal of endodontic treatment is:**

- a) Finding any missing canals and prepare them mechanically and chemically
- b) Correct diagnosis, optimal mechanical preparation and three dimensional obturation of the pulp chamber
- c) Restoring the missing tissues of the tooth
- d) Correct diagnosis, optimal mechanical and chemical preparation and three dimensional obturation of the root canal

**2. Factor NOT resulting in failures prior to root canal treatment is:**

- a) Incorrect diagnosis
- b) Wide root canals
- c) Technical difficulties
- d) Systemic diseases

**3. Factors NOT resulting failures during root canal treatment:**

- a) Missed canal
- b) Infections
- c) Access preparation
- d) Incorrect diagnosis

**4. Factor resulting failures during root canal treatment:**

- a) Anatomical variations
- b) Systemic diseases
- c) Vertical root fracture
- d) Incorrect diagnosis

**5. Factor resulting failures during root canal treatment:**

- a) Furcation perforations
- b) Ledge formation
- c) Missed canal
- d) None is correct

e) All are correct

**6. Incorrect Diagnosis in endodontics may lead to:**

- a) Missing root canals
- b) Finding narrow root canals
- c) Treating the wrong tooth
- d) Better mechanical and chemical preparation

**7. Missed Canal in endodontic treatment may lead to:**

- a) There will be no symptoms if the rest of the canals are obturated well
- b) Exacerbation after obturating the rest of the canals
- c) Vertical root fractures
- d) Difficulties in restoring the crown of the tooth

**8. What are the main clues for the presence of a separated instrument in the root canal?**

- a) Removal of small size file with a blunt tip from a canal subsequent loss of patency to the original length
- b) Vertical root fractures visible on x-ray
- c) Bleeding from the canal
- d) None is correct

**9. Canal blockage corrections are accomplished by:**

- a) Using bigger size files
- b) Means of recapitulation
- c) Using calcium hydroxide as irrigant
- d) All are correct

**10. Root canal filling material is sometimes inadvertently extruded beyond the apical limit of the root canal, ending up in the periradicular bone, sinus or mandibular canal or even protruding through the cortical plate.**

- a) True
- b) False

**11. A sudden crunching sound during obturation of the root canals is a clear indication for:**

- a) Expired obturation material
- b) Broken instrument in the root canal
- c) Overextended root canal obturation

d) Root fracture

**12. Tissue emphysema may be caused by:**

- a) A blast of air to dry a canal, and exhaust air from high speed drill directed toward the tissue
- b) Overextended root canal filling
- c) Underextended root canal filling
- d) Microorganisms left

**13. Underextended root canal filling is accomplished:**

- a) Using smaller size files
- b) By retreatment
- c) No need of correction
- d) By adding more root canal filling material

**14. When the confirmed working length is no longer attained:**

- a) One should obturate the root canal immediately
- b) One should use bigger size files
- c) Canal blockage is recognized
- d) Root canal has become narrower

**15. Perforations in the apical segment of the root canal may be the result of file negotiating a curved canal or not establishing accurate working length and instrumenting beyond the apical confines**

- a) True
- b) False

## MCQ ANSWERS

**TEST 1:** 1.B 2.A 3.C 4.A 5.B 6.C 7.C 8.C 9.A 10.C 11.D 12.A 13.A 14.A 15.A 16.A 17.A  
18.B 19.C 20.A

**TEST 2:** 1.B 2.B 3.A 4.A 5.B 6.D 7.C 8.A 9.A 10.B 11.A 12.B 13.D 14.A 15.B 16.C 17.B  
18.B 19.D 20.C

**TEST 3:** 1.C 2.D 3.D 4.B 5.D 6.C 7.A 8.C 9.D 10.C 11.C 12.A 13.A 14.D 15.B 16.D 17.D  
18.A 19.D 20.B

**TEST 4:** 1.B 2.C 3.D 4.A 5.C 6.A 7.D 8.D 9.C 10.C 11.D 12.A 13.A 14.C 15.C 16.B 17.D  
18.D 19.A 20.D

**TEST 5:** 1.C 2.D 3.B 4.A 5.A 6.A 7.D 8.B 9.A 10.D 11.D 12.B 13.A 14.B 15.D 16.A 17.C  
18.A 19.C 20.D

**TEST 6:** 1.B 2.A 3.D 4.C 5.A 6.D 7.A 8.B 9.A 10.D 11.C 12.A 13.D 14.D 15.A 16.A 17.D  
18.A 19.C 20.B

**TEST 7:** 1.A 2.C 3.D 4.B 5.B 6.A 7.C 8.C 9.D 10.D 11.B 12.C 13.A 14.B 15.C 16.A 17.D  
18.A 19.A 20.B

**TEST 8:** 1.D 2.C 3.B 4.B 5.C 6.A 7.D 8.A 9.B 10.C 11.B 12.D 13.B 14.A 15.B 16.A 17.B  
18.A 19.A 20.C

**TEST 9:** 1.C 2.B 3.B 4.A 5.B 6.A 7.A 8.B 9.A 10.D 11.A 12.D 13.A 14.A 15.C 16.A 17.A  
18.A 19.A 20.A

**TEST 10:** 1.A 2.C 3.A 4.A 5.A 6.C 7.B 8.A 9.C 10.C 11.B 12.A 13.A 14.A 15.A 16.B 17.A  
18.A 19.A 20.A

**TEST 11:** 1.A 2.A 3.D 4.A 5.A 6.A 7.B 8.A 9.A 10.A 11.A 12.A 13.A 14.A 15.A 16.A 17.A  
18.A 19.A 20.A

**TEST 12:** 1.A 2.A 3.A 4.A 5.A 6.C 7.C 8.B 9.A 10.A 11.B 12.A 13.C 14.A 15.A 16.A 17.A  
18.A 19.A 20.A

**TEST 13:** 1.A 2.C 3.C 4.C 5.A 6.D 7.A 8.D 9.C 10.A 11.A 12.A 13.A 14.C 15.A 16.A 17.A  
18.A 19.C 20.D

**TEST 14:** 1.D 2.B 3.D 4.A 5.E 6.C 7.B 8.A 9.B 10.A 11.D 12.A 13.B 14.C 15.A