

NEET MDS Conservative Dentistry and Endodontics Sample Paper – 5

Duration: 25 Minutes

Maximum Marks: 100

Instructions

- This paper contains **25** Multiple Choice Questions (Single Correct Answer), modelled on the Conservative Dentistry and Endodontics portion of **NEET MDS (NBEMS)**.
- Each correct answer carries **4 marks**. There is **negative marking of 1 mark** for each incorrect answer; unattempted questions are not penalised.
- Only **one** option is correct. Choose carefully.
- Syllabus level: **BDS-level Conservative Dentistry and Endodontics as per the NBEMS NEET MDS syllabus**.
- Use of mobile phones, calculators, or electronic gadgets is strictly prohibited.

Q1. In the histological zonation of the dental pulp, the cell-free zone of Weil is located:

- (A) Within the central pulp core
- (B) Inside the odontoblastic layer itself
- (C) In the radicular pulp only
- (D) Between the odontoblastic layer and the cell-rich zone

Q2. The outermost cellular zone of the coronal pulp, lying immediately beneath the predentin, is the:

- (A) Odontoblastic layer
- (B) Cell-rich zone
- (C) Cell-free zone of Weil



(D) Central pulp core

Q3. Pulp horns are best described as:

- (A) Calcified masses within the radicular pulp
- (B) The apical foramina of the root
- (C) Small lateral canals in the mid-root
- (D) Coronal accentuations of the pulp chamber projecting toward the cusp tips

Q4. A “true” pulp stone (denticle) is one that:

- (A) Is composed of dentin and lined by odontoblasts
- (B) Consists of concentric calcified layers of degenerating cells without dentin
- (C) Is always firmly attached to the canal wall
- (D) Represents diffuse linear calcification along blood vessels

Q5. In Vertucci’s classification of root-canal morphology, a single canal that extends uninterrupted from the pulp chamber to a single apical foramen is:

- (A) Type I
- (B) Type II
- (C) Type IV
- (D) Type VIII

Q6. Vertucci Type IV configuration describes:

- (A) One canal that divides into two and then rejoins before the apex
- (B) A single canal running the entire length of the root
- (C) Two separate, distinct canals running from the pulp chamber to two separate apical foramina



- (D) Three separate canals in a single root
- Q7.** Two canals that leave the pulp chamber separately but merge into a single canal short of the apex correspond to Vertucci:
- (A) Type II
 - (B) Type IV
 - (C) Type I
 - (D) Type VI
- Q8.** Which Vertucci type represents three separate canals travelling from the pulp chamber to three separate apical foramina in a single root?
- (A) Type V
 - (B) Type VIII
 - (C) Type III
 - (D) Type I
- Q9.** The maxillary first premolar most commonly presents with:
- (A) A single root with a single canal
 - (B) Three canals in three separate roots
 - (C) Two canals (one buccal and one palatal)
 - (D) Four canals
- Q10.** A second, frequently overlooked canal in mandibular incisors is most often located:
- (A) Lingual to the main (labial) canal
 - (B) Labial to the main canal
 - (C) In a completely separate mesial root
 - (D) Within an accessory palatal root



- Q11.** The C-shaped canal configuration is encountered most frequently in the:
- (A) Maxillary first molar
 - (B) Mandibular first premolar
 - (C) Maxillary lateral incisor
 - (D) Mandibular second molar
- Q12.** The developmental basis of the C-shaped canal is:
- (A) Excess deposition of cellular cementum
 - (B) Coalescence of multiple pulp stones
 - (C) Failure of Hertwig's epithelial root sheath to fuse on the buccal or lingual root surface
 - (D) Chronic pulpal caries
- Q13.** The maxillary first molar most typically has three roots and a canal count of:
- (A) One canal
 - (B) Three to four canals
 - (C) Six canals
 - (D) A single fused canal
- Q14.** According to the "law of centrality" (Krasner & Rankow) used to locate the pulp chamber, the floor of the chamber is always located:
- (A) Coronal to the cusp tips
 - (B) Displaced into the mesial root
 - (C) In a randomly variable position
 - (D) At the centre of the tooth at the level of the cemento-enamel junction
- Q15.** The "law of colour change" applied to the pulpal floor during access states that the floor of the pulp chamber is:



- (A) Lighter in colour than the surrounding walls
- (B) Always darker than the surrounding axial walls
- (C) Identical in colour to the walls
- (D) Uniformly chalky white

Q16. The single most consistent and reliable anatomical landmark for locating the pulp chamber during access preparation is the:

- (A) Cusp tips
- (B) Marginal ridge
- (C) Cemento-enamel junction
- (D) Apical foramen

Q17. Krasner and Rankow's first "law of symmetry" states that, except in maxillary molars, the canal orifices are:

- (A) Randomly scattered on the chamber floor
- (B) Located only along the buccal wall
- (C) Equidistant from, and lie on a line perpendicular to, a mesiodistal line drawn through the centre of the chamber floor
- (D) Always exactly three in number

Q18. A primary biomechanical objective of access-cavity preparation is to:

- (A) Remove as much sound coronal dentin as possible
- (B) Achieve straight-line access from the cavity margin to the apical third / canal orifices
- (C) Preserve the roof of the pulp chamber intact
- (D) Deliberately widen the apical foramen

Q19. Complete deroofing of the pulp chamber during access preparation is necessary in order to:



- (A) Preserve the pulp horns for vitality
- (B) Increase the fracture strength of the crown
- (C) Reduce the number of canals requiring treatment
- (D) Remove the overhanging dentin roof and expose every pulp horn and canal orifice

Q20. In an anterior tooth, removal of the “lingual shoulder” (cervical dentinal triangle) during access is performed mainly to:

- (A) Deliberately weaken the crown for extraction
- (B) Expose the labial enamel surface
- (C) Achieve straight-line access and prevent coronal curvature or binding of the instrument
- (D) Locate a second mesiobuccal canal

Q21. The ideal access-cavity outline for a maxillary central incisor is:

- (A) Oval oriented mesiodistally
- (B) A rounded triangle with its base toward the incisal edge
- (C) A broad rectangle
- (D) A small circle at the cingulum

Q22. The typical access-cavity outline for a mandibular premolar (usually single-canalled) is:

- (A) Oval, oriented buccolingually
- (B) Trapezoidal
- (C) Equilateral triangular
- (D) Rhomboidal

Q23. The classic access-cavity outline for a three-orifice maxillary first molar is:



- (A) A blunt (rounded) triangle with the apex toward the palatal
- (B) A narrow oval
- (C) A perfect circle
- (D) A wide rectangle

Q24. Compared with the coronal pulp, the radicular (root) pulp characteristically:

- (A) Contains prominent pulp horns
- (B) Is more fibrous, is less cellular apically, and communicates with the periodontium through apical and accessory foramina
- (C) Possesses no blood or nerve supply
- (D) Contains islands of enamel matrix

Q25. Multiple small accessory canals that branch and ramify near the root apex collectively form the:

- (A) Pulp horn
- (B) Isthmus
- (C) Furcation canal
- (D) Apical delta



Detailed Solutions

Q1.

Solution

Concept — Pulp zonation: From the periphery inward the coronal pulp shows the odontoblastic layer, then the cell-free zone of Weil, then the cell-rich zone, and finally the central pulp core. The zone of Weil therefore lies *between* the odontoblasts and the cell-rich zone and is rich in unmyelinated nerve plexus of Raschkow and capillaries. **Why other options are wrong:** It is neither in the central core nor inside the odontoblast layer, and it is a coronal (not exclusively radicular) feature. **Final Answer:** Between odontoblast layer and cell-rich zone

Answer: (D) [Go Back to Q1](#)

Q2.

Solution

Concept — Odontoblastic layer: The odontoblasts form the outermost cellular zone of the pulp, sitting directly against the predentin, and their processes extend into the dentinal tubules. They are responsible for dentin formation throughout life. **Why other options are wrong:** The cell-rich zone and the zone of Weil lie deeper; the central core is the innermost region. **Final Answer:**

Odontoblastic layer

Answer: (A) [Go Back to Q2](#)

Q3.

Solution

Concept — Pulp horns: Pulp horns are coronal projections of the pulp chamber that extend toward the cusp tips (or incisal edges). They are most prominent under the mesiobuccal cusp and in young teeth, and must be included during deroofing so no vital tissue is left behind. **Why other options are wrong:**

They are not calcifications, apical foramina, or lateral canals. **Final Answer:** Coronal extensions toward the cusp tips

Answer: (D) [Go Back to Q3](#)

Q4.

Solution

Concept — Pulp stones: A *true* denticle is composed of dentin and is lined by odontoblasts, whereas a *false* denticle consists of concentric layers of calcified degenerating cells (no dentin, no odontoblasts). Stones are also classified as free, attached, or embedded by their relation to the wall. **Why other options are wrong:** The concentric-layer description defines a false denticle; attachment status and diffuse linear calcification are separate classifications. **Final Answer:** Dentin lined by odontoblasts

Answer: (A) [Go Back to Q4](#)

Q5.

Solution

Concept — Vertucci Type I: Type I (designated 1) is a single canal running uninterrupted from the pulp chamber to one apical foramen—the simplest configuration, typical of many single-rooted teeth. **Why other options are wrong:** Type II and IV begin as two canals; Type VIII is three separate canals. **Final Answer:** Type I

Answer: (A) [Go Back to Q5](#)

Q6.

Solution

Concept — Vertucci Type IV: Type IV (2–2) describes two separate and distinct canals that run the full length of the root from the pulp chamber to two independent apical foramina. **Why other options are wrong:** A canal that divides then rejoins is Type III/others; a single full-length canal is Type I; three canals is Type VIII. **Final Answer:** Two separate canals to two apices

Answer: (C) [Go Back to Q6](#)

Q7.

Solution

Concept — Vertucci Type II: Type II (2–1) has two orifices that leave the pulp chamber separately and then merge into one canal that exits through a single apical foramen. **Why other options are wrong:** Type IV stays as two; Type I is a single canal throughout; Type VI has a distinct divide-merge-divide pattern. **Final**



Answer:

Answer: (A) [Go Back to Q7](#)

Q8.

Solution

Concept — Vertucci Type VIII: Type VIII (3) is three separate, distinct canals running from the pulp chamber to three separate apical foramina within a single root—the most complex canal count in Vertucci’s original eight types. **Why other options are wrong:** Type V is 1–2; Type III is 1–2–1; Type I is a single canal. **Final Answer:**

Answer: (B) [Go Back to Q8](#)

Q9.

Solution

Concept — Maxillary first premolar: It most commonly has two canals—a buccal and a palatal—frequently in two roots (Vertucci Type IV pattern), which is why it is a classic “two-canal” single tooth to remember. **Why other options are wrong:** One canal is less common; three roots/canals and four canals are atypical for this tooth. **Final Answer:**

Answer: (C) [Go Back to Q9](#)

Q10.

Solution

Concept — Mandibular incisor second canal: When a second canal is present in a mandibular incisor it lies *lingual* to the main labial canal and is easily missed on a straight radiograph because the two overlap. Angled radiographs and adequate lingual access help reveal it. **Why other options are wrong:** It is not labial, not in a separate mesial root, and there is no palatal root on a mandibular incisor. **Final Answer:**

Answer: (A) [Go Back to Q10](#)



Q11.

Solution

Concept — C-shaped canals: The C-shaped canal system is seen most often in the mandibular second molar, where the roots and canals are joined by a ribbon-like fin, producing a continuous “C” on cross-section. **Why other options are wrong:** It is uncommon in the maxillary first molar, mandibular first premolar, and maxillary lateral incisor. **Final Answer:** Mandibular second molar

Answer: (D) [Go Back to Q11](#)

Q12.

Solution

Concept — Aetiology of C-shaped canals: The anomaly arises from failure of Hertwig’s epithelial root sheath to fuse on the buccal or lingual surface of the developing root, leaving a continuous fin instead of separate roots. **Why other options are wrong:** Cementum excess, pulp stones and caries are not the developmental cause. **Final Answer:** Failure of Hertwig’s sheath to fuse

Answer: (C) [Go Back to Q12](#)

Q13.

Solution

Concept — Maxillary first molar canals: It typically has three roots (mesiobuccal, distobuccal, palatal) and three to four canals, the fourth being the extra canal within the mesiobuccal root that raises the count in a large proportion of teeth. **Why other options are wrong:** A single canal, six canals, or one fused canal do not represent the usual anatomy. **Final Answer:** Three to four canals

Answer: (B) [Go Back to Q13](#)

Q14.

Solution

Concept — Law of centrality: Krasner and Rankow’s law of centrality states that the floor of the pulp chamber is always located at the centre of the tooth at the level of the cemento-enamel junction—a key guide when hunting for orifices. **Why other options are wrong:** The floor is never coronal to the cusps, offset into a root, or randomly placed. **Final Answer:** Centre of tooth at CEJ level



Answer: (D) [Go Back to Q14](#)

Q15.

Solution

Concept — Law of colour change: The pulp chamber floor is always darker than the surrounding lighter axial walls. This colour contrast helps the operator distinguish the floor from the walls and locate the orifices at the floor-wall junction.

Why other options are wrong: The floor is not lighter, identical, or chalky white compared with the walls. **Final Answer:** Floor darker than the walls

Answer: (B) [Go Back to Q15](#)

Q16.

Solution

Concept — Reliable landmark: The cemento-enamel junction is the most consistent, reproducible landmark for locating the pulp chamber because, unlike cusps or ridges, it is minimally affected by attrition, restorations, or caries.

Why other options are wrong: Cusp tips and marginal ridges wear or are lost; the apical foramen is far removed from the chamber. **Final Answer:** Cemento-enamel junction

Answer: (C) [Go Back to Q16](#)

Q17.

Solution

Concept — Law of symmetry: The first law of symmetry states that, except in maxillary molars, the orifices are equidistant from, and lie on a line perpendicular to, a mesiodistal line drawn through the centre of the pulp chamber floor.

Why other options are wrong: Orifices are neither random, confined to the buccal wall, nor fixed at exactly three. **Final Answer:** Equidistant about the mesiodistal line

Answer: (C) [Go Back to Q17](#)



Q18.

Solution

Concept — Access objectives: Achieving straight-line access—an unobstructed path from the cavity margin to the apical third or canal orifice—is a fundamental objective; it lets instruments enter without coronal deflection and reduces procedural errors. **Why other options are wrong:** Access should *conserve* sound dentin, remove (not preserve) the pulp roof, and must not enlarge the apical foramen. **Final Answer:** Straight-line access

Answer: (B) [Go Back to Q18](#)

Q19.

Solution

Concept — Deroofing: Complete removal of the pulp chamber roof exposes all pulp horns and canal orifices, prevents retained pulp tissue (a source of discolouration and residual bacteria), and gives the operator an unobstructed view of the chamber floor. **Why other options are wrong:** Deroofing does not preserve horns, strengthen the crown, or reduce the canal number. **Final Answer:** Expose all pulp horns and orifices

Answer: (D) [Go Back to Q19](#)

Q20.

Solution

Concept — Lingual shoulder removal: In anterior teeth the cervical dental triangle (lingual shoulder) is removed to obtain straight-line access, so files enter the canal directly without curving over the shoulder or binding coronally. **Why other options are wrong:** It is not done to weaken the tooth, expose labial enamel, or locate MB2 (an upper-molar canal). **Final Answer:** Straight-line access, no binding

Answer: (C) [Go Back to Q20](#)



Q21.

Solution

Concept — Maxillary central incisor access: The outline is a rounded triangle with the base toward the incisal edge and the apex at the cingulum, reflecting the shape of the pulp chamber and its incisally placed pulp horns. **Why other options are wrong:** An oval, rectangle, or small cingulum circle does not follow the chamber anatomy and risks leaving pulp horns uncleaned. **Final Answer:** Rounded triangle, base incisal

Answer: (B) [Go Back to Q21](#)

Q22.

Solution

Concept — Mandibular premolar access: Because these teeth are usually single-canalled with a buccolingually elongated chamber, the access outline is an oval oriented buccolingually placed in the central fossa. **Why other options are wrong:** Trapezoidal, triangular and rhomboidal outlines belong to multi-canalled posterior teeth. **Final Answer:** Oval, buccolingual

Answer: (A) [Go Back to Q22](#)

Q23.

Solution

Concept — Maxillary molar access: With three orifices (MB, DB, palatal) the classic outline is a blunt (rounded) triangle whose apex points palatally and whose base lies buccally, joining the three orifices. (When MB2 is included the outline becomes rhomboidal.) **Why other options are wrong:** An oval, circle or rectangle would not connect the three orifices efficiently. **Final Answer:** Blunt triangle, apex palatal

Answer: (A) [Go Back to Q23](#)

Q24.

Solution

Concept — Radicular pulp: The root pulp is more fibrous and progressively less cellular toward the apex than the coronal pulp, and it communicates with the periodontal ligament through the apical foramen and accessory/lateral canals. **Why other options are wrong:** It has no pulp horns, is



well vascularised and innervated, and never contains enamel. **Final Answer:**
Fibrous; opens via apical/accessory foramina

Answer: (B) [Go Back to Q24](#)

Q25.

Solution

Concept — Apical delta: Near the apex the main canal may ramify into several small accessory canals that branch like the delta of a river; this network is the apical delta and can harbour tissue and bacteria that are difficult to clean. **Why other options are wrong:** A pulp horn is coronal, an isthmus connects two canals, and a furcation canal opens onto the furcation floor. **Final Answer:** Apical delta

Answer: (D) [Go Back to Q25](#)



Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	D	2	A	3	D	4	A	5	A
6	C	7	A	8	B	9	C	10	A
11	D	12	C	13	B	14	D	15	B
16	C	17	C	18	B	19	D	20	C
21	B	22	A	23	A	24	B	25	D

