

NEET MDS Conservative Dentistry and Endodontics Sample Paper – 9

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 two-step (stepwise) excavation technique used for indirect pulp capping of a deep carious lesion, the clinician deliberately:

- (A) Removes all softened dentin down to the pulp in a single visit
- (B) Leaves a thin layer of affected (remineralisable) dentin over the pulp to avoid exposure
- (C) Intentionally exposes the pulp and places gutta-percha
- (D) Extracts the tooth prophylactically

Q2. Direct pulp capping is most appropriately indicated for:

- (A) A carious exposure in a tooth with irreversible pulpitis
- (B) A small pin-point mechanical (traumatic) exposure in an asymptomatic tooth with a healthy pulp



- (C) A necrotic pulp with a periapical radiolucency
- (D) A tooth with spontaneous, lingering nocturnal pain

Q3. The classical single-visit formocresol pulpotomy of a primary molar (Buckley's formula) manages the radicular pulp chiefly by:

- (A) Inducing a reparative dentin bridge by mineralisation
- (B) Revascularising the radicular pulp
- (C) Stimulating continued root development (apexogenesis)
- (D) Fixing (mummifying) the remaining radicular pulp tissue

Q4. Compared with formocresol, mineral trioxide aggregate as a pulpotomy medicament in a vital primary molar is preferred because it:

- (A) Promotes a dentin bridge and hard-tissue healing with high biocompatibility
- (B) Is markedly cheaper than formocresol
- (C) Fixes tissue by aldehyde cross-linking
- (D) Reliably provokes rapid internal resorption

Q5. Apexogenesis is best defined as:

- (A) A vital pulp therapy allowing continued root development and physiological apical closure in an immature tooth with a vital pulp
- (B) Induction of an apical calcific barrier in a non-vital immature tooth
- (C) Surgical resection of the root apex
- (D) Complete pulpectomy of a mature closed-apex tooth

Q6. In traditional calcium hydroxide apexification of a non-vital immature permanent tooth, the induced apical barrier is:

- (A) A continuation of normal physiological root lengthening
- (B) A dense barrier that forms within one week



- (C) A calcified (osteodentin/cementum-like) barrier formed over several months, requiring periodic dressing changes
- (D) A plug of condensed gutta-percha

Q7. The principal advantage of an MTA apical plug (one-visit apexification) over long-term calcium hydroxide apexification is that it:

- (A) Creates an immediate apical barrier, shortening treatment and reducing the risk of cervical root fracture
- (B) Stimulates further lengthening of the root
- (C) Requires monthly dressing changes for a year
- (D) Revascularises the previously necrotic pulp

Q8. Regenerative endodontic (revascularisation) procedures are chiefly indicated for:

- (A) A mature tooth with a fully closed apex
- (B) A necrotic immature permanent tooth with an open (blunderbuss) apex
- (C) A primary molar with reversible pulpitis
- (D) A tooth requiring surgical crown lengthening

Q9. In the classical revascularisation protocol, bleeding is deliberately induced into the disinfected canal in order to:

- (A) Irrigate and clean the canal mechanically
- (B) Provide a blood-clot scaffold rich in stem cells and growth factors for tissue ingrowth
- (C) Bleach the discoloured crown
- (D) Form an immediate calcific apical plug

Q10. The triple antibiotic paste classically used to disinfect the canal in regenerative endodontics contains metronidazole, ciprofloxacin and:



- (A) Amoxicillin
- (B) Penicillin V
- (C) Minocycline
- (D) Erythromycin

Q11. A periapical granuloma is best described histologically as:

- (A) A pus-filled cavity lined predominantly by neutrophils
- (B) A true epithelial-lined developmental cyst
- (C) A localised area of increased (condensed) bone
- (D) A mass of chronically inflamed granulation tissue at the apex of a non-vital tooth

Q12. The most common inflammatory odontogenic cyst of the jaws, arising at the apex of a non-vital tooth, is the:

- (A) Dentigerous cyst
- (B) Odontogenic keratocyst
- (C) Radicular (periapical) cyst
- (D) Nasopalatine duct cyst

Q13. The epithelial lining of a radicular cyst arises from proliferation of the:

- (A) Reduced enamel epithelium
- (B) Rests of Serres
- (C) Odontoblastic cell layer
- (D) Epithelial cell rests of Malassez

Q14. An acute periapical (dentoalveolar) abscess is characterised by:

- (A) A symptom-free radiolucency discovered incidentally
- (B) A slow-growing epithelium-lined cavity
- (C) A localised zone of increased bone density



(D) A collection of pus with severe pain, marked tenderness to percussion and possible swelling

Q15. Condensing osteitis (focal sclerosing osteomyelitis) typically appears radiographically as:

- (A) A well-defined periapical radiolucency
- (B) An isolated widening of the periodontal ligament space
- (C) A localised radiopaque zone of increased bone density around the apex of a tooth with chronic low-grade pulpitis
- (D) A multilocular soap-bubble radiolucency

Q16. Pulp stones (denticles) that lie entirely surrounded by pulp tissue without contacting the dentinal wall are termed:

- (A) Attached denticles
- (B) Embedded (interstitial) denticles
- (C) Diffuse (fibrillar) calcifications
- (D) Free denticles

Q17. A radiographic feature that helps distinguish internal from external root resorption is that in *internal* resorption the radiolucent defect:

- (A) Clearly shifts away from the canal when the horizontal tube angle is changed
- (B) Is invariably located at the cervical margin
- (C) Extends widely into the surrounding alveolar bone
- (D) Is symmetrical, well defined and continuous with the canal, so it does not move when the tube angle is changed

Q18. Which finding favours a diagnosis of *external* (rather than internal) root resorption?



- (A) The defect shifts relative to the canal on changing the horizontal tube angle, and the canal outline can still be traced running through the lesion
- (B) A uniform, balloon-like enlargement of the pulp canal
- (C) An invariably vital pulp with a "pink spot" in the crown
- (D) A defect perfectly superimposed on and continuous with the canal

Q19. The commonly recommended minimum thickness of an MTA apical plug placed for one-visit apexification of an open apex is approximately:

- (A) 0.5 mm
- (B) 1 mm
- (C) 3–4 mm
- (D) 10 mm

Q20. During long-term calcium hydroxide apexification, the intracanal dressing is conventionally reviewed and renewed:

- (A) Once every day
- (B) Every 3 months until an apical barrier is detected (usually within 6–18 months)
- (C) Only once, at the 5-year recall
- (D) Never after the first placement

Q21. Continued thickening of the dentinal walls and apical closure after a successful revascularisation procedure is attributed mainly to survival of stem cells derived from the:

- (A) Apical papilla (stem cells of the apical papilla, SCAP)
- (B) Reduced enamel epithelium
- (C) Gingival surface epithelium
- (D) Nasal respiratory mucosa



- Q22.** Which sequence best represents the usual progression of untreated apical pathosis of pulpal origin?
- (A) Radicular cyst → periapical granuloma → acute abscess
 - (B) Condensing osteitis → acute abscess → healthy periapex
 - (C) Pulp necrosis → acute apical periodontitis → periapical granuloma/abscess → radicular cyst
 - (D) Radicular cyst → spontaneous return to a healthy periapex
- Q23.** When calcium hydroxide is used as a direct pulp-capping agent, the reparative dentin bridge it induces is characteristically:
- (A) Porous, often containing "tunnel defects" that may permit bacterial microleakage
 - (B) A completely impervious, defect-free barrier superior to all other materials
 - (C) Composed entirely of enamel
 - (D) Composed exclusively of cellular cementum
- Q24.** Ferric sulphate, used as a primary-tooth pulpotomy agent, controls the pulpal stump bleeding chiefly by:
- (A) Fixing the tissue through formaldehyde cross-linking
 - (B) Forming a ferric-ion–protein complex that mechanically seals the cut vessels (haemostasis)
 - (C) Inducing continued root development (apexogenesis)
 - (D) Exerting a specific antibiotic action within the canal
- Q25.** Condensing osteitis is distinguished from idiopathic osteosclerosis (enostosis) by the fact that condensing osteitis is:
- (A) Inflammatory in origin, associated with a non-vital or chronically inflamed pulp of the adjacent tooth
 - (B) Never related to any tooth



- (C) A frankly malignant bone lesion
- (D) An indication for removal of the surrounding alveolar bone



Detailed Solutions

Q1.

Solution

Concept — Indirect pulp capping (stepwise excavation): The aim is to avoid a frank pulp exposure. A thin layer of soft/affected (but remineralisable) dentin is intentionally left over the pulp and sealed; the arrested lesion remineralises and reactionary dentin forms, after which final excavation may be completed. **Why other options are wrong:** Removing all softened dentin risks exposure; deliberate exposure with gutta-percha and prophylactic extraction are not part of indirect capping. **Final Answer:** Leave affected dentin over the pulp

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

Q2.

Solution

Concept — Direct pulp capping indication: It is reserved for a *small*, clean, mechanical/traumatic exposure (<1 mm) in an asymptomatic tooth whose pulp is healthy, where haemostasis is easily achieved. **Why other options are wrong:** Irreversible pulpitis, necrosis with a periapical lesion and spontaneous lingering pain all require pulpectomy/root-canal treatment, not capping. **Final Answer:** Small mechanical exposure, healthy pulp

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

Q3.

Solution

Concept — Formocresol pulpotomy: Buckley's formocresol acts by *fixation (mummification)* of the radicular pulp; the aldehyde component cross-links protein, leaving the tissue chemically fixed rather than regenerated. **Why other options are wrong:** It does not create a dentin bridge, revascularise the pulp or drive apexogenesis; those are properties of biological (MTA/Ca(OH)₂) agents. **Final Answer:** Fixation (mummification)

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

Q4.

Solution

Concept — MTA pulpotomy: MTA is favoured because it is biocompatible and induces a reparative dentin bridge with genuine hard-tissue healing of the radicular pulp, avoiding the cytotoxicity and formaldehyde concerns of formocresol.

Why other options are wrong: MTA is costlier, not cheaper; it does not fix tissue by aldehyde cross-linking and does not reliably cause internal resorption. **Final**

Answer: Dentin bridge + biocompatibility

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

Q5.

Solution

Concept — Apexogenesis: It is a vital pulp therapy performed on an immature tooth with a *vital* pulp, preserving Hertwig's epithelial root sheath so that the root continues to lengthen and the apex closes physiologically. **Why other**

options are wrong: Barrier induction in a non-vital tooth is apexification; apical resection and full pulpectomy are unrelated procedures. **Final Answer:**

Continued root development, vital pulp

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

Q6.

Solution

Concept — $\text{Ca}(\text{OH})_2$ apexification: In a non-vital immature tooth, calcium hydroxide induces a calcified (osteodentin/cementum-like) barrier at the apex over several months; the paste must be renewed periodically until the barrier is confirmed. **Why other options are wrong:** True root lengthening cannot occur with-

out a vital pulp; the barrier does not form in a week and is not gutta-percha. **Final**

Answer: Calcified apical barrier over months

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



Q7.

Solution

Concept — MTA apical plug: A one-visit MTA plug provides an immediate artificial apical barrier, so treatment is completed quickly. It also avoids the prolonged calcium-hydroxide dressing that can weaken and predispose the thin immature root to cervical fracture. **Why other options are wrong:** It does not lengthen the root or revascularise the pulp, and it removes rather than requires monthly dressing changes. **Final Answer:** Immediate barrier, less fracture risk

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

Q8.

Solution

Concept — Revascularisation indication: Regenerative endodontics is aimed at the *necrotic immature* permanent tooth with an open apex, where surviving apical stem cells can repopulate the canal and allow continued root maturation. **Why other options are wrong:** A mature closed-apex tooth, a primary molar with reversible pulpitis and a crown-lengthening case are not indications. **Final Answer:** Necrotic immature open-apex tooth

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

Q9.

Solution

Concept — Blood-clot scaffold: After disinfection, over-instrumentation of the periapical tissues induces bleeding into the canal; the resulting blood clot serves as a natural fibrin scaffold carrying stem cells and growth factors that drive new tissue formation. **Why other options are wrong:** The bleed is not for mechanical irrigation, bleaching or forming an immediate calcific plug. **Final Answer:** Blood-clot scaffold

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



Q10.

Solution

Concept — Triple antibiotic paste: The classic Hoshino/Banchs paste combines metronidazole, ciprofloxacin and *minocycline*. Because minocycline can stain the crown, it is sometimes omitted or substituted (e.g. with clindamycin) to give a "double" antibiotic paste. **Why other options are wrong:** Amoxicillin, penicillin V and erythromycin are not the third component of the standard triple paste. **Final Answer:** Minocycline

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

Q11.

Solution

Concept — Periapical granuloma: It is a mass of chronically inflamed granulation tissue (lymphocytes, plasma cells, macrophages) at the apex of a pulpal non-vital tooth — despite the name it contains no true granulomas. **Why other options are wrong:** A pus cavity is an abscess; an epithelium-lined cavity is a cyst; increased bone density is condensing osteitis. **Final Answer:** Chronic granulation tissue at apex

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

Q12.

Solution

Concept — Radicular cyst: The radicular (periapical) cyst is the most common inflammatory odontogenic cyst, always associated with the apex of a non-vital tooth and developing from a pre-existing granuloma. **Why other options are wrong:** Dentigerous cyst and keratocyst are developmental; the nasopalatine duct cyst is a non-odontogenic developmental cyst. **Final Answer:** Radicular (periapical) cyst

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

Q13.

Solution

Concept — Cyst lining origin: Inflammation stimulates the epithelial cell rests of Malassez (remnants of Hertwig's root sheath in the periodontal ligament) to proliferate and form the stratified squamous lining of the radicular cyst. **Why other options are wrong:** Reduced enamel epithelium lines the dentigerous cyst;



rests of Serres relate to the odontogenic keratocyst; odontoblasts form dentin, not cyst lining. **Final Answer:** Epithelial rests of Malassez

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

Q14.

Solution

Concept — Acute periapical abscess: It is an acute pus-forming lesion at the apex of a non-vital tooth, giving severe pain, a raised/extruded feel, marked percussion tenderness and often soft-tissue swelling. **Why other options are wrong:**

An incidental symptom-free radiolucency (granuloma), an epithelium-lined cavity (cyst) and increased bone density (condensing osteitis) describe other entities.

Final Answer: Painful periapical pus collection

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

Q15.

Solution

Concept — Condensing osteitis: This is a localised bony reaction to a chronic, low-grade pulpal irritation, seen as a well-circumscribed *radiopaque* area of increased bone density at the apex, most often of a mandibular first molar. **Why**

other options are wrong: A radiolucency, an isolated widened PDL and a multilocular pattern are not features of condensing osteitis. **Final Answer:**

Localised periapical radiopacity

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

Q16.

Solution

Concept — Pulp calcifications: Denticles are classified by their relation to dentin — *free* (lying wholly within pulp tissue), *attached* (continuous with the dentinal wall) and *embedded* (enclosed within reparative dentin). **Why other options are**

wrong: Attached and embedded denticles contact/are enclosed by dentin; diffuse calcifications are amorphous linear deposits, not discrete stones. **Final Answer:**

Free denticle

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



Q17.

Solution

Concept — Internal resorption: It originates in an inflamed, usually still-vital pulp and enlarges the canal from within. The defect is smooth, symmetrical and superimposed on the canal, so on a second radiograph taken at a different angle it stays centred on the canal (it does not move). **Why other options are wrong:** Shifting away from the canal, a fixed cervical site and extensive bone involvement point to external resorption. **Final Answer:** Symmetrical defect, does not move

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

Q18.

Solution

Concept — External resorption: The lesion sits on the outer root surface, so changing the horizontal tube angle makes it shift relative to the canal (buccal-object/SLOB principle), and the intact canal outline can usually still be seen running through the defect. **Why other options are wrong:** Uniform ballooning of the canal, an invariably vital pulp with a pink spot, and a defect continuous with the canal are all features of *internal* resorption. **Final Answer:** Defect moves; canal outline preserved

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

Q19.

Solution

Concept — MTA plug thickness: An apical plug of about 3–4 mm (commonly cited as 4 mm) gives an adequate seal and mechanical resistance against condensation forces during backfilling of the open apex. **Why other options are wrong:** 0.5–1 mm is too thin to seal reliably; 10 mm needlessly obliterates canal length and material. **Final Answer:** About 3–4 mm

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



Q20.

Solution

Concept — Ca(OH)_2 apexification review: The dressing is typically changed roughly every 3 months and the tooth reviewed until a calcific apical barrier is detectable, which usually takes about 6–18 months before definitive obturation.

Why other options are wrong: Daily changes are impractical, a single 5-year review is too infrequent, and leaving the paste untouched forever ignores its resorption. **Final Answer:** Every ~3 months until barrier forms

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

Q21.

Solution

Concept — Stem cells of the apical papilla (SCAP): These undifferentiated mesenchymal cells at the immature apex are relatively resistant to periapical inflammation; their survival allows continued dentinal-wall thickening and apical closure after revascularisation.

Why other options are wrong: Reduced enamel epithelium, gingival epithelium and nasal mucosa do not drive continued root maturation. **Final Answer:** Stem cells of the apical papilla

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

Q22.

Solution

Concept — Pulpal–periapical continuum: Pulp necrosis leads to acute apical periodontitis, which if unresolved organises into a periapical granuloma (or abscesses acutely) and may finally develop an epithelial lining to become a radicular cyst.

Why other options are wrong: The other sequences reverse the progression or imply spontaneous healing of an established cyst, which does not occur. **Final Answer:** Necrosis → AAP → granuloma → cyst

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



Q23.

Solution

Concept — Calcium hydroxide dentin bridge: The bridge induced by Ca(OH)_2 is histologically porous and contains multiple "tunnel defects," which can allow bacterial microleakage — one reason calcium-silicate cements now often replace it for capping. **Why other options are wrong:** It is not a flawless barrier, and it is dentin-like reparative tissue, not enamel or pure cementum. **Final Answer:**

Porous bridge with tunnel defects

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

Q24.

Solution

Concept — Ferric sulphate: It achieves haemostasis of the radicular pulp stumps by forming a ferric-ion–protein complex that agglutinates blood proteins and seals the cut vessel ends, giving a clean amputation site without tissue fixation. **Why other options are wrong:** It does not fix tissue with formaldehyde, drive apexogenesis, or act as an antibiotic. **Final Answer:**

Ferric-ion–protein haemostatic seal

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

Q25.

Solution

Concept — Condensing osteitis vs enostosis: Condensing osteitis is an *inflammatory* sclerosis driven by a non-vital or chronically inflamed pulp in the adjacent tooth, whereas idiopathic osteosclerosis (enostosis) is a developmental radiopacity unrelated to pulpal status. **Why other options are wrong:** It is tooth-related, benign (not malignant) and does not warrant removal of surrounding bone. **Final Answer:**

Inflammatory, tooth-related sclerosis

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



Answer Key

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

