

NEET MDS Conservative Dentistry and Endodontics Sample Paper – 10

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. The whitening action of hydrogen peroxide during vital tooth bleaching is best explained by:

- (A) Precipitation of calcium salts onto the enamel surface
- (B) Mechanical abrasion of the stained surface layer
- (C) Release of reactive oxygen free radicals that oxidise pigmented organic chromophores
- (D) Chelation of iron ions bound within enamel

Q2. On breakdown, 10% carbamide peroxide (used in home/night-guard bleaching) yields hydrogen peroxide of approximately:

- (A) 10%
- (B) 16%



(C) 6.5%

(D) 3.5%

Q3. The material classically placed inside the pulp chamber during the “walking-bleach” technique for a discoloured non-vital tooth is:

(A) 37% phosphoric acid gel

(B) Resin-modified glass ionomer

(C) Sodium perborate mixed with water or hydrogen peroxide

(D) Zinc oxide eugenol paste

Q4. The most serious long-term complication associated with intracoronal (non-vital) bleaching is:

(A) Transient thermal sensitivity

(B) Marginal ditching of the restoration

(C) Reversible gingival blanching

(D) External cervical resorption

Q5. In-office (“power”) bleaching of vital teeth typically employs hydrogen peroxide in a concentration range of:

(A) 25–40%

(B) 3–5%

(C) 8–10%

(D) 0.5–1%

Q6. To reduce the risk of cervical resorption during internal bleaching, a protective barrier (e.g. glass ionomer or IRM) should be placed:

(A) In the apical third of the canal

(B) About 1–2 mm coronal to the cemento-enamel junction, sealing the canal orifice



- (C) Only over the labial enamel surface
- (D) It is unnecessary if fresh peroxide is used

Q7. Tetracycline produces intrinsic tooth discolouration because it:

- (A) Chelates calcium and is incorporated into mineralising dentin and enamel, forming a fluorescent complex
- (B) Etches and roughens the erupted enamel surface
- (C) Deposits only as a superficial extrinsic film after eruption
- (D) Selectively destroys mature odontoblasts of erupted teeth

Q8. Dental fluorosis (mottled enamel) results from excessive fluoride ingestion occurring during:

- (A) Adulthood, after the teeth have fully erupted
- (B) The period of tooth formation and enamel mineralisation (amelogenesis)
- (C) Root resorption in the primary dentition only
- (D) The immediate post-eruptive maturation of cementum

Q9. Which of the following is an example of *extrinsic* tooth discolouration?

- (A) Tetracycline staining
- (B) Dental fluorosis
- (C) Dentinogenesis imperfecta
- (D) Staining from chromogenic bacteria, tobacco and chlorhexidine

Q10. The typical labial enamel reduction required when preparing a tooth for a porcelain laminate veneer is approximately:

- (A) 1.5–2.0 mm
- (B) 0.3–0.7 mm
- (C) 2.0–2.5 mm



(D) No reduction (additive only)

Q11. Compared with direct composite veneers, porcelain (ceramic) laminate veneers offer the advantage of:

- (A) Lower cost and completion in a single visit
- (B) Simpler intraoral chairside repair
- (C) Superior colour stability and resistance to surface abrasion
- (D) No requirement for adhesive luting

Q12. The primary purpose of placing a post in an endodontically treated tooth is to:

- (A) Reinforce and strengthen the remaining root against fracture
- (B) Provide retention for a core when coronal tooth structure is extensively lost
- (C) Seal the apical foramen against microleakage
- (D) Whiten the discoloured root dentin

Q13. The “ferrule effect” that improves fracture resistance of a post-restored tooth refers to:

- (A) A 360° collar of the crown encircling at least 1.5–2 mm of sound coronal tooth structure
- (B) The degree of taper given to the post space
- (C) The thickness of the luting cement film
- (D) An anti-rotation groove cut into the core

Q14. Glass-fibre (fibre-reinforced) posts are frequently preferred over cast metal posts chiefly because their modulus of elasticity:

- (A) Is close to that of dentin, distributing stress and reducing the risk of root fracture
- (B) Is far greater than dentin, transmitting load directly to the apex



- (C) Is essentially zero, so no cement is needed
- (D) Makes them radiopaque yet impossible to bond

Q15. A custom cast post-and-core is most appropriately indicated for:

- (A) A narrow, round canal in a tooth with abundant remaining coronal structure
- (B) A flared or markedly non-circular (elliptical) canal where a prefabricated post adapts poorly
- (C) Any routine single-rooted anterior with minimal tissue loss
- (D) A tooth that requires no coronal coverage

Q16. In Ellis and Davey's classification of anterior crown fractures, an **Ellis Class II** fracture involves:

- (A) Fracture of enamel only
- (B) Fracture exposing the pulp
- (C) Fracture of the root with luxation
- (D) Fracture of enamel and dentin without pulp exposure

Q17. When immediate replantation of an avulsed permanent tooth is not possible, the ideal transport/storage medium that best preserves periodontal ligament cell viability is:

- (A) Ordinary tap water
- (B) A dry paper tissue or gauze
- (C) Hank's Balanced Salt Solution (HBSS)
- (D) Ethyl alcohol

Q18. If a proprietary tooth-preservation solution is unavailable at the accident site, the most suitable readily available storage medium for an avulsed tooth is:

- (A) Cold (refrigerated) milk



- (B) Tap water
- (C) Distilled water
- (D) Antiseptic mouthwash

Q19. The critical extra-oral *dry* time beyond which periodontal ligament cells on an avulsed tooth are unlikely to remain viable is approximately:

- (A) 5 minutes
- (B) 60 minutes
- (C) 6 hours
- (D) 24 hours

Q20. The luxation injury in which the tooth is driven axially into the alveolar bone—often appearing shorter with a high, metallic percussion note—is:

- (A) Extrusive luxation
- (B) Lateral luxation
- (C) Subluxation
- (D) Intrusive luxation

Q21. For a complicated crown fracture with a small pulp exposure in a young permanent tooth with an open apex, the treatment of choice to preserve pulp vitality is:

- (A) Immediate extraction of the tooth
- (B) Complete pulpectomy and root filling
- (C) Partial (Cvek) pulpotomy with a calcium-silicate biomaterial
- (D) Leaving the exposure untreated and observing

Q22. Potassium nitrate, the active ingredient of many desensitising toothpastes, relieves dentinal hypersensitivity mainly by:

- (A) Raising extracellular potassium around the nerve, depolarising and blocking repolarisation of the sensory fibres



- (B) Mechanically occluding the openings of the dentinal tubules
- (C) Killing the bacteria within the tubules
- (D) Chemically bleaching the exposed dentin

Q23. Which desensitising approach relieves hypersensitivity chiefly by physically *occluding* the exposed dentinal tubules?

- (A) Oxalates, stannous fluoride and arginine–calcium carbonate pastes
- (B) Potassium nitrate dentifrice
- (C) Topical corticosteroid application
- (D) Systemic analgesics

Q24. Enamel microabrasion, used to remove superficial brown fluorosis stains, is classically performed with:

- (A) Neutral sodium fluoride varnish alone
- (B) 3% hydrogen peroxide swabs alone
- (C) A paste of hydrochloric acid combined with pumice as an abrasive
- (D) Sodium perborate applied under a rubber dam

Q25. A traumatic injury in which the tooth is tender to percussion but shows *no* abnormal loosening and *no* displacement is termed:

- (A) Subluxation
- (B) Extrusive luxation
- (C) Avulsion
- (D) Concussion



Detailed Solutions

Q1.

Solution

Concept — Bleaching mechanism: Hydrogen peroxide diffuses through enamel and dentin and dissociates into reactive oxygen free radicals. These oxidise the large, darkly pigmented organic molecules (chromophores) into smaller, lighter, less-coloured compounds, lightening the tooth. **Why other options**

are wrong: No calcium salt is precipitated; vital bleaching is chemical, not abrasive; iron chelation is not the whitening pathway. **Final Answer:**

Oxidation of chromophores by free radicals

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

Q2.

Solution

Concept — Carbamide peroxide: 10% carbamide peroxide dissociates into urea and hydrogen peroxide, yielding roughly one-third its concentration as hydrogen peroxide, i.e. about 3.3–3.5%. This slow, sustained release makes it suitable for overnight tray (home) bleaching. **Why other options are wrong:** 10% and 16%

overstate the peroxide fraction; 6.5% is closer to the yield of a 20% carbamide product. **Final Answer:** $\approx 3.5\%$ hydrogen peroxide

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

Q3.

Solution

Concept — Walking-bleach technique: A paste of sodium perborate mixed with water (or hydrogen peroxide) is sealed inside the pulp chamber of a non-vital, discoloured tooth and left to act between visits—hence “walking” bleach. Sodium perborate releases oxygen slowly and is safer than concentrated peroxide alone.

Why other options are wrong: Phosphoric acid, glass ionomer and ZOE have no bleaching action. **Final Answer:** Sodium perborate

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



Q4.

Solution

Concept — Bleaching complication: External cervical (invasive) resorption is the most serious sequela of intracoronary bleaching. Peroxide can diffuse through dentinal tubules to the cervical periodontium, provoking an inflammatory resorptive process; risk rises with heat and high peroxide concentrations. **Why other options are wrong:** Thermal sensitivity, marginal ditching and gingival blanching are minor and reversible. **Final Answer:** External cervical resorption

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

Q5.

Solution

Concept — In-office bleaching: Chairside (power) bleaching uses high-concentration hydrogen peroxide, typically 25–40%, often with light or heat activation, giving a rapid result under professional soft-tissue protection. **Why other options are wrong:** 3–5% and 0.5–1% are far too weak for in-office use; 8–10% corresponds to at-home tray peroxide gels. **Final Answer:** 25–40% hydrogen peroxide

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

Q6.

Solution

Concept — Cervical barrier: Before the bleaching agent is sealed in, a 1–2 mm protective plug (glass ionomer or IRM) is placed over the gutta-percha at a level about 1 mm coronal to the CEJ. This “barrier” prevents peroxide from reaching the cervical periodontium and helps guard against resorption. **Why other options are wrong:** An apical or purely labial barrier does not protect the cervical region; a barrier is always advisable regardless of peroxide freshness. **Final Answer:** Barrier 1–2 mm coronal to CEJ

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



Q7.

Solution

Concept — Tetracycline staining: Tetracycline chelates calcium ions and is deposited as tetracycline–calcium orthophosphate within dentin and enamel during their mineralisation. The complex fluoresces initially and later oxidises to a grey-brown discolouration; hence the drug is contraindicated during odontogenesis and in pregnancy. **Why other options are wrong:** The stain is intrinsic and incorporated during formation, not a surface etch, extrinsic film, or destruction of erupted odontoblasts. **Final Answer:** Calcium chelation during mineralisation

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

Q8.

Solution

Concept — Dental fluorosis: Excess systemic fluoride during amelogenesis (tooth formation/mineralisation) disturbs ameloblast function, producing hypomineralised, porous enamel that appears as white flecks to brown mottling and pitting. Exposure after enamel maturation does not cause fluorosis. **Why other options are wrong:** Post-eruptive/adult exposure, primary-dentition root resorption and cementum maturation are not the causative window. **Final Answer:** During enamel formation (amelogenesis)

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

Q9.

Solution

Concept — Intrinsic vs extrinsic: Extrinsic discolouration lies on the external tooth surface—stains from chromogenic bacteria, tobacco, dietary tannins and chlorhexidine—and is generally removable by cleaning/polishing. **Why other options are wrong:** Tetracycline staining, fluorosis and dentinogenesis imperfecta are all *intrinsic*, incorporated within the tooth structure. **Final Answer:** Chromogenic/tobacco/chlorhexidine stains

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



Q10.

Solution

Concept — Veneer preparation: A conventional porcelain laminate veneer requires only about 0.3–0.7 mm of labial reduction, ideally kept within enamel to preserve a strong bond. Deeper reduction into dentin weakens adhesion and increases sensitivity. **Why other options are wrong:** 1.5–2.5 mm is full-crown territory; a purely additive (no-prep) veneer is a special, limited indication rather than the routine ceramic veneer preparation. **Final Answer:** $\approx 0.3\text{--}0.7\text{ mm}$

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

Q11.

Solution

Concept — Ceramic vs composite veneers: Porcelain veneers show superior long-term colour stability, surface gloss and abrasion/stain resistance, plus better biocompatibility of the glazed surface, compared with direct composite. **Why other options are wrong:** Ceramics cost more and need laboratory/indirect fabrication, are harder to repair chairside, and still depend on adhesive resin cementation. **Final Answer:** Better colour stability & wear resistance

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

Q12.

Solution

Concept — Purpose of a post: A post exists solely to retain a core (foundation restoration) when so much coronal tooth structure has been lost that the core alone would not be retentive. The core then supports the definitive crown. **Why other options are wrong:** Posts do *not* strengthen or reinforce the root (they can predispose to fracture); they do not seal the apex or bleach dentin. **Final Answer:** Retention of the core

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



Q13.

Solution

Concept — Ferrule effect: A ferrule is a 360° band of the crown that encircles at least 1.5–2 mm of sound coronal dentin above the finish line. This collar braces the tooth, resists lateral and wedging forces from the post, and markedly improves fracture resistance. **Why other options are wrong:** Post taper, cement film thickness and anti-rotation grooves are separate design features, not the ferrule. **Final Answer:** 360° collar of sound tooth structure

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

Q14.

Solution

Concept — Fibre posts: Glass-fibre posts have a modulus of elasticity close to that of dentin. Under load they flex with the root, distributing stresses evenly and reducing the incidence—and severity—of root fractures; failures, when they occur, tend to be repairable. **Why other options are wrong:** A modulus far above dentin (as in cast metal) concentrates stress; fibre posts do require adhesive cementation and are bondable. **Final Answer:** Modulus similar to dentin

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

Q15.

Solution

Concept — Cast post indication: A custom cast post-and-core adapts precisely to irregular canal geometry. It is therefore preferred for flared, oval or excessively tapered canals where a prefabricated (standardised) post would fit poorly and lack retention. **Why other options are wrong:** Round canals with ample remaining structure and small anterior teeth are ideal for simpler prefabricated fibre posts; a tooth needing no coronal coverage rarely needs any post at all. **Final Answer:** Flared / non-circular canal

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



Q16.

Solution

Concept — Ellis classification: Ellis Class I = fracture of enamel only; Class II = fracture of enamel *and* dentin without pulp exposure; Class III = fracture with pulp exposure. Class II thus involves dentin but keeps the pulp covered.

Why other options are wrong: Enamel-only is Class I, pulp exposure is Class III, and root fracture with luxation falls into higher/other categories. **Final Answer:**

Enamel + dentin, no pulp exposure

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

Q17.

Solution

Concept — Avulsion storage: Hank's Balanced Salt Solution (HBSS) is the ideal transport medium—its balanced pH and osmolality keep periodontal ligament cells viable for many hours, maximising the chance of successful replantation and healing. **Why other options are wrong:** Tap water is hypotonic and lyses PDL cells; a dry tissue desiccates them; alcohol is directly cytotoxic. **Final Answer:**

HBSS

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

Q18.

Solution

Concept — Practical storage medium: When a proprietary solution is not on hand, cold milk is the best readily available option. Its physiological osmolality, near-neutral pH and nutrients maintain PDL cell viability far better than water. **Why other options are wrong:** Tap and distilled water are hypotonic and damage the cells; antiseptic mouthwash is cytotoxic to PDL cells. **Final Answer:**

Cold milk

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



Q19.

Solution

Concept — Extra-oral dry time: Beyond roughly 60 minutes of dry extra-oral storage the periodontal ligament cells are considered non-viable; replantation is still attempted for space maintenance, but ankylosis/replacement resorption becomes the expected outcome. **Why other options are wrong:** 5 minutes is well within the survivable window; 6 and 24 hours far exceed the critical limit. **Final Answer:** ≈60 minutes

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

Q20.

Solution

Concept — Luxation types: Intrusive luxation is axial displacement of the tooth into the alveolar bone, crushing the PDL and often the neurovascular bundle. The tooth looks shorter/embedded and gives a high, metallic (ankylotic) percussion tone. **Why other options are wrong:** Extrusive luxation displaces the tooth outward; lateral luxation is sideways displacement; subluxation loosens but does not displace the tooth. **Final Answer:** Intrusive luxation

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

Q21.

Solution

Concept — Complicated crown fracture, open apex: A partial (Cvek) pulpotomy—removing only the superficially inflamed pulp and capping the healthy tissue with a calcium-silicate biomaterial—preserves vitality and allows continued root development (apexogenesis) in an immature tooth. **Why other options are wrong:** Extraction and full pulpectomy needlessly sacrifice a vital, developing pulp; leaving the exposure untreated invites contamination and necrosis. **Final Answer:** Partial (Cvek) pulpotomy

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



Q22.

Solution

Concept — Potassium nitrate: Potassium ions from the dentifrice diffuse to the pulpal nerve endings and raise the extracellular K^+ concentration. This sustained depolarisation blocks repolarisation of the sensory (A-delta) fibres, so they can no longer transmit the pain signal—a neural, not tubule-blocking, mechanism. **Why other options are wrong:** Potassium nitrate does not primarily occlude tubules, kill bacteria or bleach dentin. **Final Answer:** Nerve depolarisation by K^+

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

Q23.

Solution

Concept — Tubule-occluding agents: Oxalates, stannous fluoride and arginine–calcium carbonate precipitate insoluble crystals/deposits that plug the exposed dentinal tubules, reducing the fluid movement that triggers sensitivity—a physical occlusion mechanism. **Why other options are wrong:** Potassium nitrate acts on the nerve, not by occlusion; corticosteroids and systemic analgesics do not seal tubules. **Final Answer:** Oxalate / SnF_2 / arginine pastes

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

Q24.

Solution

Concept — Enamel microabrasion: Superficial brown fluorosis or idiopathic stains are removed with a paste combining a dilute acid (classically hydrochloric acid) with an abrasive such as pumice. Controlled rubbing simultaneously erodes and abrades a very thin, discoloured enamel layer. **Why other options are wrong:** Fluoride varnish, peroxide swabs and sodium perborate lack the abrasive/erosive action needed to lift superficial enamel stains. **Final Answer:** Hydrochloric acid + pumice

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



Q25.

Solution

Concept — Concussion: In a concussion the tooth is tender to percussion because of PDL bruising, yet it is *not* loosened and *not* displaced. It is the mildest luxation-type injury and usually needs only observation. **Why other options are wrong:**

Subluxation shows increased mobility without displacement; extrusive luxation displaces the tooth; avulsion is complete loss from the socket. **Final Answer:**

Concussion

Answer: (D)

[Go Back to Q25](#)

Answer Key

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

