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PRACTICE QUESTIONS

SCFHS Remote

DLT

Dental Lab Technician

EDITION

Original Demo

QUESTIONS

15

ISSUED

October 14, 2026

Before you begin

What this is

15 practice questions for SCFHS Remote **DLT**, each with its answer key and an explanation. Answer a question before you read its key - the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, **DLT**
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

Licence

Original Mometrix demo. This free sample contains fewer questions than the full paid edition.

QUESTION 1

SINGLE CHOICE

Which class of articulator reproduces only opening and closing (hinge) movements and is appropriate for the fabrication of a single-unit posterior crown?

- ☒ **A** Class I (non-adjustable, e.g., simple hinge)
- ☐ **B** Class II (semi-adjustable, e.g., Hanau, Whip Mix)
- ☐ **C** Class III (fully adjustable, e.g., Denar)
- ☐ **D** Class IV (fully adjustable with advanced condylar settings)
- ☐ **E** Average-value articulator with fixed condylar guidance

ANSWER A

WHY A Class I (non-adjustable) articulator reproduces only opening and closing hinge motion. It is adequate for a single-unit posterior crown where eccentric movements need not be reproduced. Semi- and fully adjustable articulators (Classes II-IV) are reserved for more complex prosthodontic work.

QUESTION 2

SINGLE CHOICE

When investing a wax pattern for a metal-ceramic (porcelain-fused-to-metal) crown using a phosphate-bonded investment, which technique is recommended to compensate for the higher casting shrinkage of base-metal alloys and the elevated thermal expansion required for porcelain bonding?

- ☐ A Use a gypsum-bonded investment with a higher water/powder ratio
- ☒ B Use a phosphate-bonded investment with a higher silica content and thermal expansion compatible with the alloy
- ☐ C Use a phosphate-bonded investment with no silica, then bench-set only
- ☐ D Use an ethyl silicate-bonded investment at low burnout temperature

ANSWER B

WHY Phosphate-bonded investments used for metal-ceramic alloys contain a balanced silica (quartz/cristobalite) refractor that provides the high thermal expansion needed so that the cast alloy fits the die, and they withstand the high burnout temperatures ($\approx 850\text{-}1000^\circ\text{C}$) required for nickel-chromium and other base-metal PFM alloys. Gypsum-bonded investments break down at those temperatures; silica-free phosphate investments lack the expansion required for PFM alloys; ethyl silicate-bonded investments are used for higher-fusing alloys and produce different expansion behavior.

QUESTION 3

SINGLE CHOICE

A semi-adjustable articulator such as the Whip Mix or Hanau is generally capable of reproducing which of the following excursive movements of the mandible, beyond simple opening and closing?

- ☐ A Only hinge (opening and closing) movement
- ☒ B Hinge movement plus protrusive and lateral excursions with fixed/mean condylar guidance values
- ☐ C Realistic border movements determined by each patient's pantographic tracing
- ☐ D No excursive movements, only centric relation

ANSWER B

WHY A semi-adjustable articulator accepts arbitrary or 'mean value' condylar inclinations and Bennett angle settings (often from a facebow and protrusive record). It can therefore reproduce protrusive and lateral excursions in addition to hinge opening/closing. Fully adjustable articulators require individual pantographic tracings; non-adjustable (mean value) articulators reproduce only hinge motion.

QUESTION 4

SINGLE CHOICE

Which component of a cast removable partial denture provides direct retention by engaging an undercut on the abutment tooth?

- ☐ A Major connector
- ☐ B Rest
- ☒ C Clasp (retainer) arm
- ☐ D Indirect retainer

ANSWER C

WHY The clasp (retainer) arm is the flexible portion of the RPD that engages an undercut on the abutment tooth and resists displacement of the prosthesis away from the tooth (direct retention). Major connectors join the sides of the framework, rests transmit vertical loads, and indirect retainers act against rotational displacement away from an axis.

QUESTION 5

SINGLE CHOICE

Which wire alloy is most commonly used as the retentive (labial bow / adjustment) component of a Hawley-type removable orthodontic appliance?

- ☐ A Stainless steel 18-8 (hard)
- ☒ B Australian stainless steel (special grade, blue-coded)
- ☐ C Titanium-molybdenum alloy (TMA)
- ☐ D Nickel-titanium (NiTi)
- ☐ E Cobalt-chromium (Elgiloy, blue)

ANSWER B

WHY The labial bow of a Hawley appliance is normally fabricated from Australian special-grade stainless steel wire (typically 0.7 mm / 0.028 in). This alloy has the appropriate combination of stiffness, formability and corrosion resistance for an adjustable retentive bow. Hard 18-8 stainless is too stiff; TMA and NiTi are used for fixed appliance archwires; Elgiloy is reserved for specialized clasp wires.

QUESTION 6

SINGLE CHOICE

Which anatomical landmark of the mandibular edentulous arch marks the junction between the fixed keratinized mucosa covering the alveolar ridge and the movable lining mucosa of the floor of the mouth, and is the recommended location for the lingual border of a mandibular complete denture?

- ☐ A Retromolar pad
- ☐ B External oblique ridge
- ☒ C Alveololingual sulcus (floor-of-mouth reflection)
- ☐ D Mylohyoid ridge

ANSWER C

WHY The alveololingual sulcus (the reflection where the alveolar ridge mucosa meets the floor-of-mouth mucosa) defines the functional depth of the lingual flange of the mandibular complete denture. The retromolar pad is the posterior landmark, the external oblique ridge is a bony ridge on the buccal side, and the mylohyoid ridge is the internal bony landmark whose overlying mucosa must often be relieved.

QUESTION 7

SINGLE CHOICE

On a surveyed cast removable partial denture framework, which component is designed to provide indirect retention by resisting displacement of the denture base away from the supporting tissues?

- ☐ A Direct retainer (clasp)
- ☐ B Reciprocal arm
- ☐ C Rest seat
- ☒ D Indirect retainer (e.g., auxiliary occlusal rest or lingual plate)

ANSWER D

WHY An indirect retainer is a component placed as far as possible from the fulcrum line of the partial denture so that, when sticky foods pull the denture base away from the tissues, the indirect retainer engages a rest seat and prevents rotational displacement. Direct retainers (clasps) engage undercuts to resist vertical dislodgement; reciprocal arms neutralize the torque created by the clasp; rest seats simply receive the rest. Only the indirect retainer provides the anti-rotational, indirect retention function.

QUESTION 8

SINGLE CHOICE

Which wire alloy is most commonly used as the retentive (clasp/adjustment) component of a Hawley-type removable orthodontic retainer because of its formability and resilience?

- ☐ A Stainless steel 18-8 (hard)
- ☐ B Titanium-molybdenum alloy (TMA)
- ☐ C Nickel-titanium (NiTi)
- ☒ D Elgiloy (cobalt-chromium-nickel) - blue (soft-temper)

ANSWER D

WHY Elgiloy in its soft/blue temper is the classic alloy for the labial bow and Adams clasps of a Hawley retainer because it is highly formable yet resilient after heat treatment. Hard stainless steel is difficult to adjust without fracture; NiTi is superelastic and not readily formable into precise clasps; TMA is more commonly used in fixed orthodontic archwires, not retainers.

QUESTION 9

SINGLE CHOICE

In the lost-wax casting procedure for a base-metal (nickel-chromium) alloy, the invested mold is placed in a furnace and heated gradually to eliminate the wax pattern. What is the principal purpose of this burnout step?

- ☐ A To sinter the investment to improve mold strength
- ☒ B To completely eliminate wax and establish a uniform mold temperature for casting
- ☐ C To pre-oxidize the metal alloy for ceramic bonding
- ☐ D To sterilize the mold before casting

ANSWER B

WHY The burnout cycle is designed to completely eliminate the wax pattern from the investment and to bring the mold up to a uniform casting temperature appropriate for the alloy being cast. Pre-oxidation is a separate procedure for metal-ceramic alloys and is not the goal of burnout; sterilization is not the purpose of this step.

QUESTION 10

MULTIPLE CHOICE

Which of the following disinfectants are accepted by the CDC/ADA guidelines for disinfecting an irreversible hydrocolloid (alginate) impression without causing dimensional distortion? (Choose two.)

- ☐ A 2% glutaraldehyde solution by immersion
- ☒ B 5.25% sodium hypochlorite (1:10 dilution) by spray or immersion
- ☒ C Quaternary ammonium compound spray
- ☐ D Iodophor immersion for 30 minutes
- ☐ E Autoclaving at 121 °C for 15 minutes

ANSWER B - C

WHY Alginate impressions are highly susceptible to distortion from prolonged immersion. The accepted methods are spray or short-immersion application of diluted sodium hypochlorite or iodophors, as well as quaternary ammonium sprays. Prolonged immersion in glutaraldehyde can distort the gel, and autoclaving destroys the impression.

QUESTION 11

MULTIPLE CHOICE

Which of the following are characteristic properties of Type IV dental stone (die stone, high-strength)? (Choose two.)

- ☒ **A** High compressive strength and low expansion upon setting
- ☐ **B** High water-to-powder ratio to improve flow
- ☐ **C** Used primarily for diagnostic casts and study models
- ☒ **D** Lower setting expansion compared with Type II plaster

ANSWER A • D

WHY Type IV die stone is formulated to provide high compressive strength and minimal setting expansion, making it suitable for accurate dies for crown and fixed partial denture fabrication. It is mixed at a low water-to-powder ratio (not high) and is not used for diagnostic casts, which are typically made from Type II plaster.

QUESTION 12

MULTIPLE CHOICE

Which of the following are considered Type IV gypsum products according to ADA classification? (Choose two.)

- ☐ **A** Dental plaster (Type II)
- ☒ **B** Dental stone, high-strength (Type IV)
- ☒ **C** Dental stone, high-strength, high-expansion (Type V)
- ☐ **D** Impression plaster (Type I)

ANSWER B • C

WHY Type IV is dental stone, high-strength, low-expansion, and Type V is dental stone, high-strength, high-expansion - both are Type IV-class high-strength stones used for master casts in fixed prosthodontics. Type I is impression plaster and Type II is model plaster, neither of which is a Type IV stone.

QUESTION 13

SINGLE CHOICE

In the lost-wax casting procedure for a nickel-chromium base-metal alloy, the wax pattern is invested in a phosphate-bonded investment and the mold is burned out at approximately 900-1000 °C. What is the principal purpose of the high-heat burnout?

- ☐ A To harden the phosphate-bonded investment and prevent mould cracking
- ☒ B To completely eliminate the wax and preheat the mould to a temperature that compensates for alloy shrinkage on cooling
- ☐ C To sinter the alloy particles before casting
- ☐ D To sterilize the mould prior to casting
- ☐ E To convert the investment into a glassy phase that bonds to the metal

ANSWER B

WHY Phosphate-bonded investments are designed to compensate for the solidification shrinkage of base-metal alloys by means of their setting and thermal expansion. Burning out at high temperature ($\approx 900-1000\text{ }^{\circ}\text{C}$) ensures complete wax elimination and brings the mould to a temperature at which the combined hygroscopic, setting and thermal expansion produce the required compensation. Sintering and mould sterilization are not the objectives.

QUESTION 14

SINGLE CHOICE

A laboratory technician is fabricating a single-unit posterior metal-ceramic crown. Which class of articulator is most appropriate for this restoration?

- ☐ A Mean value (semi-adjustable) articulator
- ☐ B Fully adjustable articulator with facebow
- ☒ C Simple hinge (non-adjustable) articulator
- ☐ D Gnathological fully adjustable articulator

ANSWER C

WHY A single-unit posterior crown requires only opening and closing movements and a static maximum intercuspation position. A simple hinge articulator is sufficient and is the standard choice for single-unit fixed prostheses; semi-adjustable or fully adjustable articulators are reserved for multi-unit FPDs or extensive rehabilitation.

QUESTION 15

SINGLE CHOICE

Which personal protective equipment (PPE) item is specifically required when operating a high-speed lathe or trimming model in the dental laboratory?

- ☐ A Single-use patient bib
- ☒ B Protective eyewear / face shield
- ☐ C Sterile surgical gloves
- ☐ D Lead apron

ANSWER B

WHY Protective eyewear or a face shield is mandatory when operating a lathe or trimming because flying particles, pumice slurry and dust can cause serious eye injury. Patient bibs are not PPE for laboratory staff, sterile surgical gloves are not required for routine bench work, and lead aprons are used for radiographic procedures, not for laboratory trimming.