ORE Part 2

Dental Manikin (DM) Guidance

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Introduction

Candidates are expected to demonstrate competence, knowledge and familiarity in the aspects of dentistry outlined in the General Dental Council's (GDC) Preparing for Practice (PfP) learning outcomes for dentists. The standards of conduct, performance and ethics required are described in the GDC publication Standards for the Dental Team.

The ORE Part 2 assesses learning outcomes drawn from the four overarching PfP domains:

- Clinical
- Communication
- Professionalism
- Management and Leadership

These domains encompass the knowledge, skills, behaviours and professional attributes expected of a newly qualified dentist practising safely and effectively in the UK. The full range of relevant learning outcomes may be assessed across the four component examinations that comprise ORE Part 2.

Information and Instructions

The primary aim of this assessment is to evaluate a dentist's ability to safely treat patients in practice. The DM component of the examination will comprise one three-hour session.

1. What to Expect

Prior to the Examination

Candidates will receive an email before the examination date confirming the examination venue and allocated arrival time. Careful attention should be paid to the address provided, as examinations may be held at different venues.

Candidates are responsible for ensuring that they have read all relevant ORE Part 2 Policy and Procedure documents before the examination.

Requests for reasonable adjustments must be submitted at least six weeks before the examination date and in accordance with the Reasonable Adjustments Policy.

Details of the identification requirements and registration process will also be provided by email before the examination.

Upon Arrival

Candidates are required to arrive at their allocated time. Those arriving early may be asked to leave the building until their scheduled arrival time. Candidates who arrive late will not be permitted to sit the examination. Sufficient time should therefore be allowed for travel to the examination venue.

Upon arrival, candidates will be required to register and present proof of identity in accordance with the instructions provided before the examination.

All equipment required for the examination, including equipment for relevant stations, will be provided. Books, electronic devices (including smart devices and AI-enabled wearable technology), and watches are not permitted in the examination.

Refer to Appendix 1 for a list of equipment provided.

During the examination

The DM examination lasts three hours and consists of two major and one minor exercise. It is a test of a candidate's clinical skills under simulated clinical conditions using a manikin representing a patient with plastic teeth held in jaws mounted in a phantom head.

The dental manikin should be treated as if it were a real patient at all times.

Candidates will receive an initial briefing from the Lead Examiner outlining the exercises and any relevant examination instructions. A member of the Skills Lab staff will then provide a briefing on the manikin, equipment and facilities, followed by a practice

session to familiarise candidates with the equipment and teeth and confirm everything is functioning correctly before the examination begins.

Candidates must complete and have each exercise assessed before starting the next. Exercises may only begin after discussion with the examiners, who will advise when they wish to review the work. Once this stage has been completed to their satisfaction, candidates should ask the nurses to notify the examiners that they are ready for assessment. Assessments will be conducted in the order requests are received. Time spent with the examiners forms part of the examination and contributes to the assessment of the candidate and their work. Discussions with examiners may also contribute to the assessment of clinical knowledge, professionalism and communication skills.

The examination may be recorded for quality assurance or training purposes.

2. What does the DM examination consist of?

The DM is a timed practical examination in which candidates are required to complete three exercises within three hours. The three exercises will be selected by the Lead Internal Examiner and confirmed by the GDC-appointed External Examiner. Two of the exercises will be classified as major exercises due to their complexity and the time needed to complete them. The third exercise will be a minor exercise, as it is less complex and requires less time.

Below is a non-exhaustive list of the exercises that may be included:

a. Amalgam
b. Composite
c. Root Canal Therapy
d. Crown Preparation
e. Labial Veneer
f. Temporary Crown
g. Impression Taking
h. Rubber Dam
i. Partial Denture

Refer to Section 6 for example exercises and the associated desirable and undesirable criteria.

Safe Practice is assessed independently and considers:

Operating Position

- The candidate is expected to sit upright with their back supported by the backrest and their body positioned fully against the back of the operator's stool. The stool height should be adjusted so that thighs are parallel to the floor and feet are firmly placed on the ground. The neck may be slightly flexed forward to allow clear vision into the manikin's mouth.

- The manikin should be positioned with the torso flat and parallel to the floor, the head aligned similarly, and the occlusal plane of the upper arch in a vertical position. This arrangement ensures that procedures on the upper arch are carried out using indirect vision. The head may be turned slightly to the left or right to improve access and visibility of the operating area.
- Depending on the candidate's dominant hand, the chair and operating position should be adjusted to a position between the 10:30 and 1:30 clock positions relative to the patient to facilitate improved access to the opposite side of the arch.

Hand Mirror

- Most of the exercises will be carried out on teeth in the upper arch so that the candidate can demonstrate their ability to use a mirror to aid indirect vision when completing the exercise.

Finger Rests

- The air rotor and slow handpiece should normally be held in a pencil grip close to the head of the handpiece, except in exceptional circumstances.
- A finger rest should be used to provide stability and control when using an air turbine, slow handpiece, or sharp instruments such as chisels.
- A finger rest should be placed within the same arch and on the same side of the arch as the tooth being prepared.
- A finger rest on the opposite side of the arch is generally not advised, as it may reduce control of the handpiece and lead to incorrect bur orientation.
- Some chisels and similar instruments may be used with a palm grip; however, a finger rest must still always be used.
- Excessive force should be avoided when using hand instruments, as this may cause the plastic tooth to fracture unpredictably.

Infection Prevention and Control

- It is anticipated that the candidate will follow all standard infection control procedures throughout the manikin exercise.
- There are two circumstances during the examination where normal infection control procedures may be breached:
  - The protective mask may be lowered to allow the candidate to be heard when speaking to the examiners.
  - A dropped instrument or handpiece may be picked up, but only with the explicit agreement of a nurse or examiner

3. Marking

Exercises

Each examiner independently rates each exercise and safe practice sections against a structured mark sheet.

For clinical work, the following four-level grading system is used:

- Exceeds Standard
  - Fulfils all, or nearly all, of the desirable criteria specified for that stage of the examination.
- Meets Standard
  - Fulfils most of the desirable criteria specified for that stage of the examination. The work is imperfect but not sufficiently do to be detrimental to the health of the tooth or the patient.
- Below Standard
  - Fulfils some of the desirable criteria specified for that stage of the test. The work is imperfect and sufficiently so to be detrimental to the health of the tooth or the patient. While sub-standard, the work presented might be redeemed by further intervention.
- Well Below Standard / Not Done
  - fulfils very few of the desirable criteria specified for that stage of the test. The work is so imperfect that it would be detrimental to the health of the tooth or the patient.

Safe Practice

All candidates are observed by the examiners during the examination to ensure that they can practise safely. Candidates will be warned by the examiners where there are breaches of health and safety and infection control procedures or persistent use of an inappropriate operating position or where their actions would be dangerous to the patient or staff. Where these breaches of Safe Practice are repeated and persistent they will be recorded accordingly.

Safe Practice is graded using the following grading scale:

- Exceeds Standard
  - Adopts an appropriate operating position; uses a correct finger rest; and uses all appropriate infection control techniques.
- Meets Standard
  - Occasionally adopts a poor operating position; occasionally uses an inappropriate finger rest; and an occasional lapse in the use of cross-infection control techniques.
- Below Standard / Well Below Standard
  - Frequently adopts an inappropriate operating position; frequently uses an inappropriate finger rest and frequently uses an appropriate cross-infection control technique: such that there is a significant risk of danger to the patient and/or other members of the team. These actions continue despite repeated warnings by the examiners.

Overall

The two major exercises carry twice the weight of the minor exercise. The overall result for the three exercises is determined by aggregating the marks from each, with this weighting incorporated. This means an *Exceeds Standard* in a major exercise will

compensate for a *Below Standard* in any exercise, however an *Exceeds Standard* in a minor exercise will not compensate for a *Below Standard* in a major exercise.

Underlying each grade is a numerical score which is used to calculate a total for the exercises and for safe practice. Each section – Exercises and Safe Practice – is then classified as **Pass**, **Borderline**, or **Fail**.

Where a candidates' overall grade falls within a defined borderline range their work is reviewed independently by all the examiners on the day and their final outcome classified as Pass or Fail.

To pass the DM component of the examination a candidate must pass the exercises AND safe practice sections of the assessments.

Professionalism

A mark for professionalism will also be recorded and considered accordingly.

4. Irregularities

If an unexpected circumstance or procedural irregularity occurs during the examination, a member of the examination delivery team must be informed as soon as possible. This includes any situation outside a candidate's control that is believed to have adversely affected performance. Every effort should be made to report the issue as soon as it arises and before leaving the examination venue. Prompt notification allows the matter to be investigated and, where possible, resolved as quickly as possible, including on the day of the examination.

5. Examination Regulations

Candidates are reminded that discussion of the examination is strictly prohibited both before and after the examination. This requirement also extends to the period after leaving the examination venue, as discussing or sharing details of the examination is a breach of examination regulations. The GDC and the Consortium expect all candidates to demonstrate professionalism and integrity at all times, before, during, and after the examination.

6. Examples – Dental Manikin

The following notes provide general guidance on the desirable and undesirable features of Dental Manikin Test exercises. As they are written in broad terms, they apply to any tooth specified for the task. The tooth and preparation required for each examination will be detailed on the instruction sheet issued at the start of the test. For example, a Class II cavity may be an MO, DO, or MOD preparation in either a premolar or molar tooth.

A AMALGAM EXERCISES

i. Class I Occlusal Cavity in an Upper Posterior Tooth

Prepare a Class I cavity in an upper molar or premolar involving the occlusal fissure and mesial and distal pits. This cavity would be lined as necessary. This tooth or an alternate tooth may be packed with amalgam on request.

	Desirable Features
1. Cavity Design	An occlusal cavity
2. Approach	Occlusally using a mirror to aid vision
3. Outline Form 3.1 Position	Smooth with well-delineated cavity margin Follows the central fissure pattern and includes mesial and distal pits
4. Occlusal Cavity 4.1 Depth 4.2 Width 4.3 Retention form	 Sufficient to clear occlusal caries (~ 2mm) Sufficient to clear fissure and caries in mesial and distal pits Parallel or slightly convergent walls Flared mesially and distally to avoid undermining marginal ridges
5. Lining	Thin layer applied to the pulpal floor (if applied) (While a lining may not be required clinically, it may be included here to ensure that the candidate can adequately carry out the procedure.)
6. Completed Restoration	Well condensed Carved to give some occlusal anatomy

	Undesirable Features
1. Outline Form	Rough and irregular
2. Occlusal Cavity 2.1 Position 2.2 Depth	 Not extending along fissure pattern and/or doesn't include the mesial or distal pits Too shallow so caries not reached and amalgam likely to fracture Too deep so risk of pulpal exposure

2.3 Width 2.4 Size 2.5 Retention form	Too narrow so difficult access and difficulty in packing amalgam Too wide so undermining buccal or palatal cusp Too large / too small for size of carious lesion shown on radiograph provided Severely overcut weakening tooth, undermining marginal ridge(s)
3. Lining	Messy: uneven thickness of material Wrong place: Lining on enamel and/or extending to the cavity margin Over extension into space for amalgam
4. Completed Restoration	Under-condensed Over-packed/under-carved Under-packed/over-carved No occlusal anatomy Fractured

ii. Class I Occluso-Palatal Cavity in an Upper Molar

Prepare a Class I cavity in an upper molar involving the occluso-palatal fissure and distal pit. This cavity would be lined as necessary. This tooth or an alternate tooth may be packed with amalgam on request.

	Desirable Features
1. Cavity Design	An occlusal-palatal cavity
2. Approach	Occlusally using a mirror to aid vision
3. Outline Form	Smooth with well-delineated cavity margin
4. Occlusal Cavity 4.1 Position 4.2 Depth 4.3 Width 4.5 Retention form	 Follows the length of occluso-palatal fissure and includes the distal pit Sufficient to clear caries in fissure and occlusal pit (~ 2mm) Sufficient to clear caries in fissure and occlusal pit (~1.5 mm) Parallel walls with rounded internal line angles.
5. Lining	Thin layer applied to the axial wall (if applied) (While a lining may not be required clinically, it may be included here to ensure that the candidate can adequately carry out the procedure.)
6. Completed Restoration	Well condensed Carved to give some occlusal anatomy

	Undesirable Features
1. Outline Form	Rough and irregular
2. Occlusal Cavity 2.1 Position 2.2 Depth 2.3 Width 4.5 Retention form	 Not following the fissure pattern and/or doesn't include the occlusal pit Too shallow so caries not reached and amalgam likely to fracture Too deep so risk of pulpal exposure Too narrow so difficult access and difficulty in packing amalgam Too wide so undermining transverse ridge or cusp Overcut, weakening tooth
5. Lining	Messy: uneven thickness of material Wrong place: Lining on enamel and/or extending to the cavity margin Over extension into space for amalgam
6. Completed Restoration	Under-condensed Over-packed/under-carved Under-packed/over-carved No occlusal anatomy Fractured

iii. Class II in an Upper Posterior Tooth

Prepare a Class II cavity in the tooth indicated to correspond to the caries shown on the accompanying radiograph. The caries may be located mesially, distally or on both sides of the tooth. Place a lining as required. This tooth or an alternate tooth may be packed with amalgam on request.

	Desirable Features
1. Cavity Design	Proximal box or boxes and occlusal lock
2. Approach	Occlusally using a mirror to aid vision
3. Outline Form	Smooth with well-delineated cavity margin
4. Box 4.1 Depth 4.2 Width 4.3 Size 4.4 Retention form	 Gingivally clear the contact point with the adjacent tooth by ~0.5mm Bucco and palatally clear contact with adjacent tooth by ~0.5mm Mesio-distally sufficient to be in dentine and remove caries Appropriate to have removed the caries indicated by radiograph Occlusally convergent walls
5. Occlusal Lock	

5.1 Depth 5.2 Width 5.5 Retention form	Sufficient to clear occlusal caries (~ 2mm) Sufficient to clear fissure and caries Parallel or slightly convergent walls Dovetail extension slight dilation only
6. Lining	Thin layer applied to the axio-pulpal wall of box (if applied) (While a lining may not be required clinically, it may be included here to ensure that the candidate can adequately carry out the procedure.)
7. Matrix band	Applied tightly around the circumference of the tooth Tightly wedged in place Holder correct way up
8. Completed Restoration	Well condensed Carved to give a marginal ridge and some occlusal anatomy Tight proximal contact point - as far as models allow

	Undesirable Features
1. Outline Form	Rough and irregular
2. Box 2.1 Position 2.2 Depth 2.3.1 BL Width 2.3.2 MD Width 2.4 Retention form	 Incorrectly positioned Too far to buccal / too far to palatal Too shallow / too deep Too narrow so contacts not appropriately cleared buccally or palatally. Too wide so buccal and/or palatal contacts widely cleared Unsupported enamel left on margin walls Too narrow mesio-distally so caries not removed Too wide with risk of pulpal exposure Divergent walls Excessive / Undermined cusp
3. Occlusal Lock 3.1 Position 3.2 Size 3.3 Depth 3.4 Width 3.5 Retention form	 Not extending along fissure pattern Too large / too small for size of carious lesion shown on radiograph provided Too shallow so caries not reached and amalgam likely to fracture Too deep so risk of pulpal exposure Too narrow so difficult access and difficulty in packing amalgam Too wide so undermining buccal or palatal cusp No retentive dovetail Overcut, weakening tooth, undermining marginal ridge
4. Lining	Messy: uneven thickness of material

	Wrong place: Lining on enamel and/or extending to the cavity margin Over extension into space for amalgam
5. Matrix band	Loosely applied Not wedged or incorrectly wedged Upside down / latch upside down Positioned inappropriately
6. Completed Restoration	Under-condensed Over-packed/under-carved Under-packed/over-carved No occlusal anatomy No marginal ridge Ineffective proximal contact point Fractured
7. Other	Damage to the adjacent tooth, other than minor grazing

B COMPOSITE EXERCISES

i. Class II in an Upper Posterior Tooth

Prepare a Class II cavity in the tooth indicated to correspond to the caries shown on the accompanying radiograph. The caries may be located mesially, distally or on both sides of the tooth. Place a lining as required. This tooth or an alternate tooth may be packed with amalgam on request.

	Desirable Features
1. Cavity Design	Proximal box or boxes and extending with some extension along the fissure as appropriate
2. Approach	Occlusally using a mirror to aid vision
3. Outline Form	Smooth cavity outline
4. Box 4.2 Depth 4.3 Width 4.4 Size	 Gingivally clear the contact point with the adjacent tooth by ~0.5mm Bucco and palatally clear contact with adjacent tooth by ~0.5mm Mesio-distally sufficient to be in dentine and remove caries Appropriate to remove the caries indicated by radiograph
5. Occlusal Lock 5.1 Depth 5.2 Width	 Sufficient to clear occlusal caries (~ 2mm) Sufficient to clear fissure and caries
6. Lining	Thin layer applied to the axio-pulpal wall of box (if applied) (While a lining may not be required clinically, it is included here to ensure that the candidate can adequately carry out the procedure.)

7. Matrix band	Applied tightly around the circumference of the tooth Tightly wedged in place
8. Completed Restoration	Composite to be placed increments of no more than 2mm deep Manipulated to restore the lost marginal ridge and occlusal anatomy Tight proximal contact point - as far as models allow Smooth surface finish

	Undesirable Features
1. Outline Form	Rough and irregular
2. Box 2.1 Position 2.2 Depth 2.3.1 BL Width 2.3.2 MD Width 2.4 Finish	 Incorrectly positioned – too far to buccal / too far to palatal Too shallow / too deep Too narrow so contacts not appropriately cleared buccally or palatally Too wide so buccal and/or palatal contacts widely cleared. Too narrow mesio-distally so caries not removed Too wide with risk of pulpal exposure Excess left on margin / interproximally Poor anatomy / over packed /under packed
3. Occlusal Lock 3.1 Position 3.2 Size 3.3 Depth 3.4 Width	 Not extending along/too far along fissure pattern Too large / too small for size of carious lesion shown on radiograph provided Too shallow so caries not reached Too deep so risk of pulpal exposure Too narrow so difficulty placing composite
4. Lining	If placed, messy: uneven thickness of material wrong place: lining on enamel and/or extending to the cavity margin
5. Matrix band	Loosely applied Not wedged or incorrectly wedged Positioned inappropriately
6. Completed Restoration	Under-condensed Over-packed/under-carved Under-packed/over-carved No occlusal anatomy No marginal ridge Ineffective proximal contact point Voids present

7. Other	Damage to the adjacent tooth, other than minor grazing

ii. Class III in an Upper Anterior Tooth

Prepare a Class III cavity in the tooth indicated to correspond to the caries shown on the accompanying radiograph or photograph. Place a lining as required. Pack the indicated cavity with composite and finish it to restore the tooth's shape and contour as requested.

	Desirable Features
1. Approach	Palatal approach using a mirror to assist
2. Outline Form	Rectangular with well rounded corners Smooth with well-delineated 90° cavo-surface angle No or light chamfer
3. Cavity 3.1 Size 3.2 Position 3.3 Depth B – P 3.4 Width I – G	 Appropriate to size of caries indicated in the radiograph provided At level of contact point Sufficient to clear contact point by width of probe tip (~0.5mm) Sufficient to remove dentinal caries and carious enamel indicated in the radiograph provided
4. Lining	Thin layer applied to the pulpal wall of box (if applied)
5. Completed Restoration	Smooth surface finish Contour smooth and continuous with the enamel

	Undesirable Features
1. Outline Form	Rough Excessive bevel
2. Cavity 3.1 Position 3.2 Depth B – P 3.3 Width I – G	'Carious dentine' left or too close to pulp Too far to the incisal or towards the gingiva Too shallow/too deep Too wide/not wide enough
4. Lining	Messy: uneven thickness of material Wrong place: Lining on enamel and/or extending to the cavity margin
5. Completed Restoration	Rough Does not restore tooth contours or contact point Voids /defects at margin Flash of excess - over-packed and inadequately finished. Improperly cured (soft)
6. Other	Damage to the adjacent tooth, other than minor grazing

iii. Class IV for an Upper Anterior Tooth

Restore a Class IV fractured incisal edge of an upper anterior tooth. Prepare the fractured tooth as required. Place a lining as necessary. Restore the tooth's shape and contour with composite. A sheet of questions to ask the patient may also need to be completed.

	Desirable Features
1. Action Form	Consent accurately obtained Medical history checked Accident details noted
2. Tooth Preparation	Smoothed the rough fractured enamel margins The contour of the margin should be smooth and curved. 0.5-1mm chamfer or bevel (and not a shoulder) around fracture site
3. Lining	Thin layer applied to the pulpal horn (if applied)
4. Completed Restoration	Smooth surface finish Contour smooth and continuous with the enamel Accurately restores the shape and contour of the tooth

	Undesirable Features
1. Action Form	Consent not/incorrectly obtained Medical history not checked Accident details not elicited
2. Tooth Preparation	No tooth preparation or tooth still left rough and irregular Tooth margin stepped Margin has excessive bevel or is a shoulder
3. Lining	Messy: uneven thickness of material Wrong place: Lining on enamel and/or extending to the cavity margin
4. Completed Restoration	Rough Does not restore tooth contours or contact point Voids /defects at margin Flash of excess - over-packed and inadequately finished Improperly cured (soft)

iv. Class V – Buccal or Palatal in an Upper Tooth

Prepare a Class V cavity in the tooth indicated to correspond to the caries shown on the buccal/lingual surface of the tooth. Place a lining as required. You may be asked to pack this or another tooth with composite and finish appropriately. Note: The dimensions given below relate to the preparation of a buccal class V cavity in an upper canine to ensure the complete removal of the caries around the cervical margin while not damaging the 'gingiva' of the phantom head model.

	Desirable Features
1. Approach	Buccal or palatal approach using a mirror to assist vision
2. Outline Form	Smile-shaped with well rounded corners following the gingival contour Smooth with well-delineated 90° cavo-surface angle No or light chamfer
3. Cavity 3.1 Size 3.2 Position 3.3 Width M – D 3.4 Height I – G 3.5 Depth	 Appropriate to size of caries indicated in the radiograph provided Gingival margin ~1mm above gingiva Sufficient to clear caries ~2.5–3.0mm Sufficient to remove dentinal caries ~ 1.5mm Sufficient to remove dentinal caries: 0.75mm gingivally, 1.25mm incisally
4. Lining	Thin layer applied to the pulpal wall (if applied)
5. Completed Restoration	Smooth surface finish Contour smooth and continuous with the enamel

	Undesirable Features
1. Outline Form	Rough Excessive bevel
3. Cavity 3.1 Position 3.4 Width M – D 3.5 Height I – G	'Carious dentine' left or too close to pulp Too far to the incisal or towards the gingiva Too shallow/too deep Too wide/not wide enough
4. Lining	Messy: uneven thickness of material Wrong place: Lining on enamel and/or extending to the cavity margin
5. Completed Restoration	Rough Voids /defects at margin Flash of excess - over-packed and inadequately finished Improperly cured (soft)
6. Other	Damage to the gingiva

v. Composite Build-Up of a Fractured Cusp on a Posterior Tooth

Restore a fractured cusp and cavity in an upper premolar or molar. Prepare the tooth as necessary, place a lining where appropriate and restore and finish the contour of the tooth in composite.

	Desirable Features
1. Tooth Preparation	Smoothed the rough fractured enamel margins A bevel on the enamel margin Remove unsupported tooth enamel

2. Lining	Thin layer applied to the pulpal floor, if appropriate
3. Completed Restoration	Incremental build-up of bulk of tooth. Smooth surface finish Contour smooth and continuous with the enamel. Accurately restores the shape and contour of the tooth Provides a tight contact point with adjacent tooth

	Undesirable Features
1. Tooth Preparation	No tooth preparation or tooth still left rough and irregular Tooth margin stepped Tooth has been over prepared Margin has excessive bevel or shoulder
2. Lining	Messy: uneven thickness of material Wrong place: Lining on enamel and/or extending to the cavity margin
3. Completed Restoration	Rough Does not restore tooth contours or contact point Voids /defects at margin Flash of excess - over-packed and inadequately finished Improperly cured (soft)

C ROOT CANAL THERAPY

i. Access Cavity Preparation

Prepare an access cavity in the tooth provided. The tooth may be an anterior tooth, a premolar or molar. Direct access to the canal(s) needs to be demonstrated with an endodontic instrument. This exercise may be combined with another exercise e.g. the placement of a rubber dam.

	Desirable Features
1. Access Cavity	Adequate size, appropriate shape and position of access cavity which will depend on the tooth selected for the exercise. Direct line access to canal(s) Outline of the pulp chamber appropriately shaped / removed

	Undesirable Features
1. Access Cavity	Too small for adequate access Too large and destructive of tooth tissue Wrong position on tooth surface Wrong shape for canal/pulp chamber position Pulp chamber roof not completely removed

ii. RCT – On a Single Rooted Tooth or a Single Canal in a Multi-Rooted Tooth.

Prepare an access cavity. Identify the canal to be prepared which may be in a single rooted tooth or a single canal in a multi rooted tooth. Complete the debridement of the root canal and finalise its preparation. Obturate the canal and record a post-operative radiograph. The use and number of radiographs recorded will for part of the assessment of good clinical judgement. Note: the access cavity may already be completed in the tooth provided.

	Desirable Features
1. Access Cavity	Adequate size, appropriate shape, appropriate position which will depend on the tooth selected for the exercise. To gain direct line access to canal and remove roof of pulp chamber
2. Canal Filling 2.1 Apical Position 2.2 MAF Size 2.3 Canal Shape 2.4 Condensation	 Canal to be filled to 0.5 – 1.0mm of the radiographic apex Consistent with canal size (i.e. three sizes larger than the first file that binds) Smooth conical preparation tapering towards the apex Follows the curvature of the tooth. Adequate coronal flare to remove infected dentine and facilitate obturation Radiograph showing dense gutta-percha filling against the canal walls over the length of the root Without voids

	Undesirable Features
1. Access Cavity	Too small for adequate access Too large and destructive of tooth tissue Wrong position on tooth surface Wrong shape for canal/pulp chamber position Pulp chamber roof not completely removed
2. Canal Filling 2.1 Apical Position 2.2 MAP 2.3 Canal Shape 2.4 Condensation	 GP or sealant beyond the apex GP well short of the apex Inappropriate size of GP used Insufficient or too great an apical taper Insufficient or too great a coronal flare Step or marked junction at join between coronal flare and apical taper Too few GP points used Inadequately condensed with voids present Mismatch in size of spreader and or accessory sized GP points
3. Other	Too many / unjustified radiographs taken

	Inaccurate interpretation of radiographs Inadequate use of irrigants and recapitulation

D CROWN PREPARATION EXERCISES

i. Full Gold Crown Preparation

Prepare the tooth indicated to receive a gold veneer crown. The laboratory instructions may also need to be completed.

	Desirable Features
1. Index Preparation	Sectioned once in the middle of the tooth
2. Occlusal Reduction	1mm even reduction over whole of occlusal surface 1.5mm functional cusp bevel
3. Axial Reduction	6° - 20° taper
4. Margin	0.5 – 0.75 mm chamfer Continuous even reduction around the tooth ~ 1mm above gingival margin Contact cleared with adjacent teeth by ~ 0.5mm
5. Surface Finish	Smooth with no sharp angles
6. Path of Insertion	Perpendicular to the occlusal plane

	Undesirable Features
1. Index Preparation	Not used Reveals inappropriate reduction
2. Occlusal Reduction	Too great / too little reduction occlusally No functional cusp bevel
3. Axial Reduction	Too great / too little axial reduction Too great / too little taper Undercut regions present
4. Margin	Too wide or shoulder or inverted Too narrow or absent so not continuous Too far above / below gingival margin Not cleared contact with adjacent tooth
5. Surface Finish	Rough and pitted
6. Path of Insertion	In conflict with tooth structure of adjacent teeth Seating groove incorrectly placed / angled
7. Other	Damage to adjacent teeth other than minor grazing

ii. Metal Ceramic Crown Preparation

Prepare the tooth indicated to receive a metal ceramic crown. The tooth should be prepared for:

- a metal margin all around the tooth

- a molar tooth for the porcelain to cover the buccal surface, and extend over the buccal cusp to just short of the central fossa
- an anterior tooth for the porcelain to cover the labial, incisal, and proximal surfaces of the tooth up to contact points.

The laboratory instructions may also need to be completed.

	Desirable Features
1. Index Preparation	Sectioned once in the middle of the tooth
2. Occlusal Reduction	2.0mm over occlusal surface / incisally for metal and porcelain Otherwise, 0.75-1mm
3. Axial Reduction	Sufficient to give 6°-20° taper 1.2mm labially and 0.5–1.0mm lingually
4. Margin	Continuous around the tooth 0.5-0.75mm chamfer palatally and extending to just buccal to the contact point ~1.2mm labial shoulder 1mm above gingival margin Contact cleared with adjacent teeth by ~ 0.5mm
5. Surface Finish	Smooth with no sharp angles
6. Path of Insertion	Perpendicular to the occlusal plane Does not conflict with adjacent teeth

	Undesirable Features
1. Index Preparation	Not used Reveals inappropriate reduction
2. Occlusal Reduction	Too great / too little reduction occlusally No functional cusp bevel
3. Axial Reduction	Too great / too little axial reduction Too great / too little taper Undercut regions present
4. Margin	Too wide or shoulder or inverted Too narrow or absent so not continuous Too far above / below gingival margin Not cleared contact with adjacent tooth
5. Surface Finish	Rough and pitted
6. Path of Insertion	In conflict with tooth structure of adjacent teeth Seating groove incorrectly placed / angled
7. Other	Damage to adjacent teeth other than minor grazing

iii. All Ceramic Crown Preparation

Prepare the tooth indicated to receive an all-ceramic crown.

	Desirable Features	
1. Index Preparation	Sectioned once in the middle of the tooth	
Material	IPS e.max CAD blocks	Monolithic zirconia
2. Occlusal/Incisal Reduction	Anterior Teeth: 1.5-2.0mm incisally Posterior teeth: 1.5-2.0mm for functional cusps and 1.0-1.5mm for non-functional cusps	1.0mm minimum
3. Axial Reduction	1.0-1.5mm of axial reduction at the margin Sufficient to give 8°-12° taper No undercut areas	1.0mm minimum Taper/convergence: 8°– 12°
4. Margin	1.0mm wide rounded shoulder 90° cavo-surface angle with rounded internal line angles Contact cleared with adjacent teeth by ~ 0.5mm Continuous around the tooth Placed 1mm above the gingiva	1.0mm wide rounded shoulder with no sharp internal angles No feather-edge or knife-edge margins Contact cleared with adjacent teeth by ~ 0.5mm Continuous around the tooth Placed 1mm above the gingiva
5. Surface Finish	Smooth with no sharp angles	
6. Path of Insertion	Perpendicular to the occlusal plane Does not conflict with adjacent teeth	

	Undesirable Features
1. Index Preparation	Not used Reveals inappropriate reduction
2. Occlusal/Incisal Reduction	Too great/too little reduction occlusally/incisally No functional cusp bevel
3. Axial Reduction	Too great / too little axial reduction Too great / too little taper Undercut regions present
4. Margin	Too wide or shoulder or inverted Too narrow or absent so not continuous Too far above / below gingival margin Not cleared contact with adjacent tooth
5. Surface Finish	Rough and pitted with sharp line angles
6. Path of Insertion	In conflict with tooth structure of adjacent teeth

	Seating groove incorrectly placed / angled
7. Other	Damage to adjacent teeth other than minor grazing

E LABIAL VENEER

Labial Veneer Preparation on Upper Anterior Tooth

Prepare the tooth indicated to receive indirect veneer in ceramic or composite. The tooth and the material will be shown in the accompanying instructions during the examination.

The laboratory instructions may also need to be completed.

	Desirable Features
1. Index Preparation	Sectioned once in the middle of the tooth
2. Incisal Reduction	1.5mm incisally
3. Axial Reduction	0.5-0.7mm labially
4. Margin	0.5mm labial shoulder/chamfer At or 0.5mm below gingival margin – but for the examination ~ 1mm above the gingival margin Contact with adjacent teeth NOT to be cleared
5. Surface Finish	Smooth with no sharp angles

	Undesirable Features
1. Index Preparation	Not used Reveals inappropriate reduction
2. Incisal Reduction	Too great / too little reduction incisally
3. Axial Reduction	Too great / too little axial reduction
4. Margin	Too wide or inverted Too narrow or absent so not continuous Too far above / below gingival margin Contact excessively cleared with adjacent teeth
5. Surface Finish	Rough and pitted
6. Path of Insertion	In conflict with tooth structure of adjacent teeth
7. Other	Damage to adjacent teeth other than minor grazing

F Temporary Crown Exercise

Temporary Crown preparation On a Prepared Tooth

Using the impression provided prepare a temporary crown for the pre-prepared tooth shown on the Instruction Sheet for the Examination.

	Desirable Features
1. Fitting surface	Fit accurately to the prepared tooth

2. Occlusal Surface	Follow the contours of the existing tooth Match the opposing tooth's contacts
3. Marginal Fit	Fit accurately to the prepared crown margin without a gap
4. Surface finish	Smooth contoured Smooth even surface finish

	Undesirable Features
1. Fitting surface	Not seating fully home. Adaptation loose and poorly adapted to the tooth structure Too tight to fit to the prepared tooth
2. Occlusal Surface	Doesn't match to contours of existing tooth High spots / increase OVD No occlusal contact / in infra-occlusion
3. Marginal Fit	Poorly adapted to crown margin – voids around periphery Excess material causing temporary crown not to seat accurately Excessive width/ depth overlapping margin onto gingiva
4. Surface finish	Rough and pitted

G IMPRESSION EXERCISES

i. Impression Taking - Full Arch

A stone cast or phantom head model will be provided. Record an impression of this model for 1) a study cast or 2) a working cast for an RPD as indicated. Trays and the materials will be provided.

The laboratory instructions may also need to be completed.

	Desirable Features
1. Tray selection	Appropriate size - covers of all teeth Adequate extension into buccal sulcus and lingual sulcus
2. Impression 2.1 Amount of material 2.2 Adhesive 2.3 Mixing 2.4 Thickness	 Fills tray appropriately Adherent to tray Completely mixed without streaks or large air bubbles 3-5mm thick
3. Extension 3.1 Buccal sulcus 3.2 Lingual sulcus 3.2 Distal extension	 Full depth of sulcus recorded with only minor air blows Full depth of sulcus recorded with only minor air blows Last standing tooth in arch adequately supported
4. Teeth 4.1 Buccal surfaces 4.2 Buccal surfaces 4.3 Occlusal surfaces	 All teeth recorded with only minor air blows All teeth recorded with only minor air blows All teeth recorded with only minor air blows

4.4 Proximal to saddle	All teeth recorded with only minor air blows
5. Gingival sulcus	Completely recorded without tears or significant air blows
6. Edentulous saddles 6.1 Extension 6.2 Mucosa	 Buccal and lingual completely recorded Adequate surface detail

	Undesirable Features
1. Tray selection	Too large / too small a tray selected Under / over extension into buccal sulcus Under / over extension into lingual sulcus
2. Impression 2.1 Amount of material 2.2 Adhesive 2.3 Mixing 2.4 Thickness	 Tray overloaded / insufficiently loaded Impression material not adherent to tray Incompletely mixed – with streaks Numerous small bubbles of air in impression Too thick / too thin – tray showing through
3. Extension 3.1 Buccal sulcus 3.2 Lingual sulcus 3.2 Distal extension	 Under / overextension of impression into sulcus Large air blow on sulcus border Under / overextension of impression into sulcus Large air blow on sulcus border Last standing tooth only partially recorded Last standing tooth unsupported
4. Teeth 4.1 Buccal surfaces 4.2 Buccal surfaces 4.3 Occlusal surfaces 4.4 Proximal to saddle	 Partially recorded with major air blows Partially recorded with major air blows Partially recorded with major air blows Partially recorded with major air blows
5. Gingival sulcus	Partially recorded with major air blows or significant drag(s)
6. Edentulous saddles 6.1 Extension 6.2 Mucosa	 Gross under / over extension of impression material into sulci No surface detail

ii. Impression Taking – Definitive crown

Record a working impression of a tooth already prepared to receive a crown. A sectional tray and materials will be provided. The laboratory instructions may also need to be completed.

	Desirable Features
1. Impression 1.1 Amount of material	 Fills tray appropriately

1.2 Adhesive 1.3 Mixing 1.4 Thickness 1.5 Wash	Adherent to tray Completely mixed without streaks or large air bubbles 3-5mm thick Complete mixing of wash and rest of impression
2 Crown 2.1 Tooth surfaces 2.2 Margin 2.3 Gingival Crevice	 Recorded with only minor air blows Recorded with no air blows Recorded with only minor tear or air blows
3. Adjacent Teeth 3.1 Tooth Surfaces	 Recorded with only minor air blows

	Undesirable Features
1. Impression 1.1 Amount of material 1.2 Adhesive 1.3 Mixing 1.4 Thickness 1.5 Wash	 Too much / too little material No adhesive used / not adherent to tray Inadequately mixed with streaks / numerous air bubbles Too thick / too thin – tray showing through Wash not confluent with rest of impression / join stepped
2 Crown 2.1 Tooth surfaces 2.2 Margin 2.3 Gingival Crevice	 Partly recorded with air blows, drags, folds or tears Partly recorded / air blows on margin Recorded with major tear or air blows
3. Adjacent Teeth 3.1 Tooth Surfaces	 Mostly/partly recorded Recorded with major air blows or tears or folds

H RUBBER DAM EXERCISE

Rubber Dam Placement

The rubber dam is to be applied to isolate the tooth or teeth indicated in the Instruction Sheet for the Examination. The rubber dam needs to be secure and applied atraumatically anchoring the dam in a way that facilitates access and isolation of the tooth to be prepared. Note: This may also be included as a component in another exercise.

	Desirable Features
1. Teeth Isolated	At least one tooth each side of the tooth to be prepared
2. Isolation	No gaps or tears at gingival margin Margin inverted around all teeth
3. Frame	Correctly orientated Evenly vertically positioned over mouth Evenly laterally positioned

4. Anchorage	Appropriate teeth should be identified for secure anchorage of the rubber dam Wedges, floss ligatures, Wedget or clamps should be applied ensuring an atraumatic and appropriately orientated clamp or ancillary device

	Undesirable Features
1. Teeth Isolated	Only isolated tooth to be prepared Insufficient teeth isolated to get adequate access Whole arch / excessive number of teeth isolated
2. Isolation	Gaps or tears at gingival margin Margin not inverted around even around tooth to be prepared
3. Frame	Frame upside down Too high covering nose or eyes / too low not covering upper lip Too far to right or left leaving gap for 'mouth'
4. Anchorage	The dam has no anchorage or clamp(s) have been applied in such a manner as to traumatise the gingival tissues An inappropriate amount of anchorage has been used that hinders access to the tooth for restoration

I PARTIAL DENTURE EXERCISES

i. Rest Seat Preparation

Prepare rests seats necessary for the construction of a chrome cobalt partial denture in the teeth described in the Instruction Sheet. Note this exercise may be included as part of another exercise.

	Desirable Features
1. Outline shape	Triangular / Spoon-shaped Smooth outline
2. Position	On the marginal ridge Mid-way between buccal and lingual
3. Size	~1/3 mesio-distal width of the tooth ~1/3 bucco-lingual width of the tooth
4. Depth	0.75-1.0 mm
5. Finish	Smooth with no sharp angles

	Undesirable Features
1. Outline shape	Rough and irregular Square
2. Size	

2.1 M – D 2.2 B – L	Too large / too small Too wide / too narrow
3. Position	Too far to the buccal / lingual
4. Depth	Too deep > 1.2mm / too shallow <0.75mm
5. Finish	Rough / sharp internal line angles

ii. Partial Denture Design Drawing

The design for a partial denture is provided in writing for the study cast provided. Draw this design for the cast chrome framework on the study cast or on the odontogram as required for a technician to fabricate.

	Desirable Features
1. General	Only those components noted in the instruction sheet should be included in the design All components joined together to represent a single unit for casting A smooth continuous outline should be used to draw each component showing its shape and position
2. Saddles	Drawn to show which missing teeth are to be replaced A mesh is preferred to retain the acrylic of saddle and should be located on the crest of the ridge A tissue stop is required with a free end saddle
3. Support 3.1 Rests 3.2 Position	 Correct number, size and shape Correctly drawn on tooth or odontogram
4. Retention 4.1 Type 4.2 Clasp Position 4.3 Clasp Tip Reciprocation	 Correct type of clasp drawn Correctly drawn on tooth or odontogram Positioned where there is appropriate undercut for that type of undercut Correctly drawn and positioned on tooth
5. Connectors 5.1 Major 5.2 Minor	They should be positioned appropriately and have an appropriate correct width and shape to ensure sufficient strength for their role Drawn to join the saddle areas together Drawn to connect the other components of the RPD to the major connector

	Undesirable Features
1. General	Some components omitted or extra ones included Components not joined to rest of the design

	Incomplete outline / inaccurate draw of shape and or position
2. Saddles	Omitted or inaccurately placed
3. Support 3.1 Rests 3.2 Position	 No or incorrect number, size and or shape Incorrectly positioned on tooth or odontogram
4. Retention 4.1 Type 4.2 Clasp Position 4.3 Clasp Tip Reciprocation	 No or incorrect type of clasp drawn Incorrectly positioned on tooth or odontogram Incorrect position for undercut No or incorrect level of reciprocation
5. Connectors 5.1 Major 5.2 Minor	 Omitted or incorrect size, shape or position Omitted or incorrect size, shape or position

Appendix 1

Equipment and Materials

Candidates are reminded that variations in equipment, instruments, artefacts, materials and displays are unavoidable across Dental Manikin examination diets and between laboratory setups within the same diet. These differences fall within the scope of acceptable simulated clinical practice and form part of the ORE.

Introduction

The following equipment and materials are provided for the Dental Manikin component of ORE Part 2. Candidates may provide their own eye protection or loupes however; they must not bring their own instruments or burs. Any additional materials required for specific exercises will be supplied.

A. KaVo Dental Simulation Unit

KaVo Handpieces: Turbine, Contra-angle, Straight handpiece (when required)
Phantom Head Models: Frasaco AG3
Replacement Teeth: AG3- ZE

B. Burs Stand

High Speed
- Tungsten Carbide Burs
  - 170, 330, 331, 331L, 56, 557

Diamonds Double Striper
- L767C, L767VF, 170L, 260.8F, 120C, 285.5VF

Slow Handpiece / Latchgrip
- Steel Burs
  - Rose head burs size: ½, 1, 3, 5, 8
- White Stone
- Shofu Round
- Shofu Flame: FL2
- Brownie
- Flame
- Mandril for Soflex Discs

Additional burs will be provided on the day when necessary.

C. Endodontic Exercise

Gates Glidden sizes 1 - 6
K-Flex files sizes 10 – 60 Length 30mm
Finger Spreaders sizes XF, FF, MF, F, FM, M
Gutta Percha Points sizes 15 – 40
Accessory Points Sizes XF, FF, MF, F, FM, M
Plastic Tray

Plastic Cup
Endo Locking syringe
Endo Ring
Sybron Endo Tubi Seal Extended working time
Wax pads

D. Instrument Tray

Mirror Handle Stainless Steel Round + Front Surface No 5 Mirror
Probe 6
Excavator 129/130
Excavator 123/124
Chisel Hu-Friedy CP 53/54
Plastic Filling Instrument Hopson 156
Burnisher 1L
Amalgam Plugger G
Mortonson 2 Hollow Handle
Carver Hollenbach 3
Tweezers College Serrated
Spatula No 3
Scissor Straight Serrated 11.5cm
Thymozin Instrument No.2
Probe Perio Williams 14W
Retractable Disposable Scalpels No 11 Blue 25pk
6Inch Metal Slim Ruler
Pencil

E. Equipment / materials on the bench top

Floss
Amalgam Carrier
Matrix Retainers: Siqveland
Matrix Band: Cut strips of wide Stainless-steel strip; Directa Clear Matrix Strip
Curing Light (1 between 2 candidates)
Spectrum B3 Composite capsule
Composite Gun
Composite bonding agent
Plastic Dappens pot
Microbrush application brush
Lab putty + Activator (1 between 2 candidates)
Cotton Rolls
Cotton pledgets
Wooden wedges

F. Other Materials available from nursing staff

Amalgam Disperalloy No 2 Normal set
Dentsply Dycal Base / Catalyst

Softlex Discs
3M ESPE Softlex Finishing Strips
3M ESPE Softlex Polishing Strips
Rubber dam
Toffelmire No 1
Tofflelmire bands

G. Other Materials / equipment available for specific exercises

Rubber Dam
- Rubber dam holder
- Rubber dam clamps, assorted
- Rubber dam forceps
- Wedgets Stabilising Cord

Impressions
- Impression material
- Plastic stock tray
- Adhesive

Temporary Crown
- Putty Index
- Temporary crown and bridge acrylic
- Acrylic finishing burs and discs

Rest Seat Preparation
- Appropriate burs