

**UNIVERSITY OF BOLTON**  
**FACULTY OF HEALTH AND WELLBEING**  
**BSc (HONS) DENTAL TECHNOLOGY**  
**SEMESTER TWO EXAMINATION 2023/2024**  
**DENTAL TECHNOLOGY TECHNIQUES FOR**  
**REMOVABLE PROSTHODONTICS (DENTURES)**  
**MODULE NO: DNT5104**

Date: Wednesday 15 May 2024

Time: 2.00 pm – 4.00 pm

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**INSTRUCTIONS TO CANDIDATES:**

There are 8 questions on this paper.

Answer ALL questions on this examination paper.

The examination is out of 100 and the pass mark is 40%.

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1. Polymethylmethacrylate (PMMA) is a commonly used denture material.
  - a) PMMA is prone to fracture. State 3 reasons which can cause a fracture to occur.

(3 Marks)
  - b) What will happen if you repair a fractured denture and do not roughen the PMMA of the repair site adequately?

(1 Mark)
  - c) If the surface of the denture is rough post-processing, what has a technician done incorrectly during the flasking and packing process?

(3 Marks)
  - d) Whilst cobalt chromium dentures are considered superior for partially dentate patients, when would it be appropriate to provide a denture in PMMA?

(6 marks)
  - e) Why does contraction porosity occur?

(1 mark)
  - f) If the flasking plaster is difficult to remove from in-between the denture teeth, what is the likely cause?

(1 mark)

**Total 15 Marks**

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2. Techniques can be used to refurbish or replace older dentures quickly.

a) If a denture is still accepted by a patient due to aesthetics but is loose due to fit, a reline or rebase may be prescribed. Explain the differences.

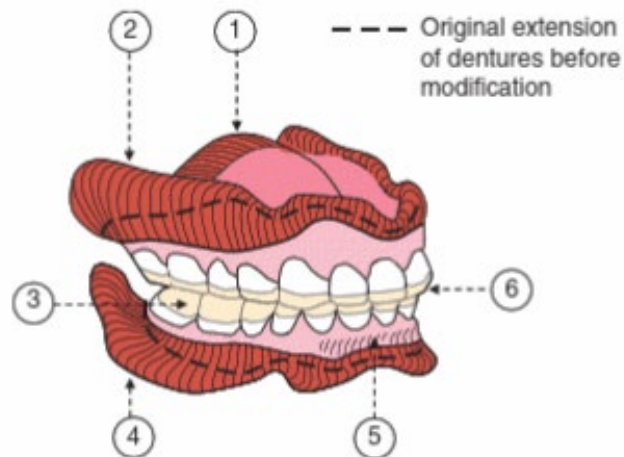
(3 Marks)

b) From the techniques stated in 2a, if a denture has had numerous repairs, which technique is likely to be prescribed? Justify your answer.

(3 Marks)

c) A copy denture technique could be used for complete dentures. Review the image below, 6 modifications are indicated. Identify the modifications and explain how they may improve the original denture.

(14 Marks)



**Total 20 Marks**

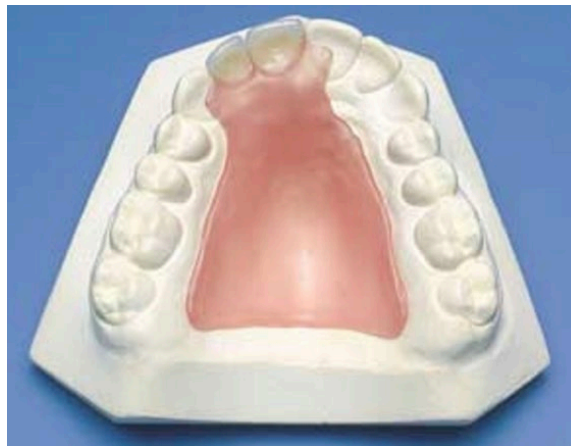
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3. Denture designs are required to be chosen for each individual patient.

a) Review the image below, identify the type of denture and state its indications.

(3 Marks)



b) Review the below image, identify the major connector, and highlight the indications and contraindications of the design.

(6 Marks)



c) If a patient presents with a palatal torus, which major connector should be prescribed?

(1 Mark)

**Total 10 Marks**

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4. Jaw classifications can influence design considerations when designing appliances.

a) A class I is considered an 'ideal' or 'normal' jaw relationship, from the list below indicate which you consider correct considerations for the design.

1. Equal overjet and overbite of 4mm
2. Straight to convex profile
3. Malocclusion component is restricted to the dental mal relations only
4. Harmonious relationship of the underlying skeletal structure
5. No cross bite in the posterior
6. Patients present competent lips
7. Equal overjet and overbite of 2mm
8. Edge-to-edge arrangement of the anteriors

(6 Marks)

b) Class III arrangements in the anterior region may be edge-to-edge, and have 7 mandibular anterior dentitions. Explain why you would use 7 teeth rather than the traditional 6.

(4 Marks)

**Total 10 marks**

5. a) Provide a definition of an immediate denture

(2 marks)

c) What are the benefits of providing an immediate denture?

(7 marks)

d) What are the issues with immediate dentures?

(5 Marks)

**Total 14 Marks**

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6. Flanges aid support, stability, and retention in an appliance, as well as aiding aesthetics.

a) Explain the rationale for elongating gingival margins for an older patient.

(2 Marks)

b) For what type of patient would you have a smooth denture, where the flange is not contoured or stippled?

(1 Mark)

c) Utilising a full flange in a complete denture aids the stability and retention of the prosthesis, explain why?

(2 Marks)

**Total 5 Marks**

7. Occlusal rims are used by the clinician for recording occlusion and indicating the appropriate lip support.

a) The clinician can mark some notation lines into a maxilla edentulous occlusal rim. List four different lines and identify their use for a technician in setting up. You may draw your own diagram to aid in answering.

(up to 8 Marks)

b) For an edentulous patient which occlusal recording should a clinician use and why?

(2 Marks)

c) Where should an anterior maxillary rim be placed by a technician and why?

(3 Marks)

d) Whilst wax and wire is a common material for an occlusal rim construction as it is cheap and quick, suggest a more appropriate material and explain why.

(2 Marks)

**Total 15 marks**

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8. Dental stone and model fabrication play pivotal roles in the success of appliances. Consider the individual questions below in relation to the manufacturing of dentures:

a) Name three anatomical landmarks on a model you would expect to see and outline how this can impact on the design of a denture.

(6 Marks)

b) Identify the correct stone to use for a model to manufacture a Cobalt Chromium denture, with a justification for this choice.

(3 Marks)

c) Due to the contraction associated with curing of traditional heat cured acrylic, suggest an alternative to type III stone.

(2 Marks)

**Total 11 Marks**

**END OF QUESTIONS**