

UNIVERSITY OF BOLTON

FACULTY OF HEALTH AND WELLBEING

BSc (HONS) DENTAL TECHNOLOGY

SEMESTER TWO EXAMINATION 2022/2023

**DENTAL TECHNOLOGY TECHNIQUES FOR
REMOVABLE PROSTHODONTICS (DENTURES)**

MODULE NO: DNT5104

Date: Wednesday 10 May 2023

Time: 2.00 pm – 4.00 pm

INSTRUCTIONS TO CANDIDATES:

There are 13 questions on this paper.

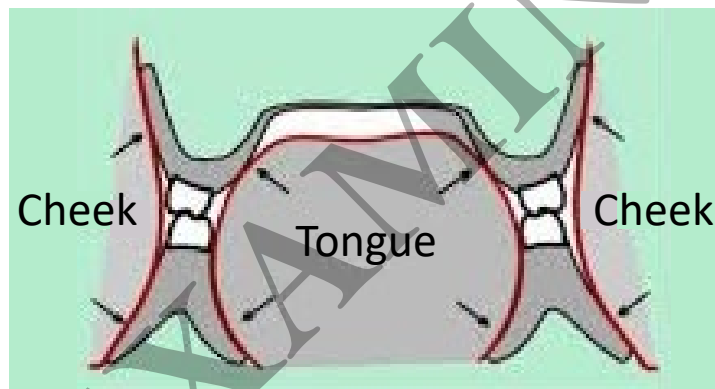
Answer ALL questions.

Marks for parts of questions are shown in brackets.

Examination total is out of 100.

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1. If a clinician indicates on a prescription that a patient has a flabby ridge how does a technician modify the special tray?
2 marks
2. Average value articulators are more appropriate than simple hinge articulators for denture fabrication, state one reason why.
1 mark
3. Explain what is being illustrated in the diagram below. Why is this important to incorporate into complete dentures?
4 marks



4. The Copy Denture Technique is considered as an alternative method of manufacturing complete dentures, especially for older patients:
 - a) State the benefits of using this technique.
(7 marks)
 - b) Laboratory Putty or Alginate can be used to create the impression of the denture. Choose the material you deem to be the most appropriate, explain why?
(3 marks)

Total 10 marks

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5. Polymethylmethacrylate is used in both Complete Denture and Cobalt Chromium dentures. Poor processing techniques can impact the denture longevity or acrylic quality:

- a) State the 3 possible causes of teeth debonding due to curing issues, with a clear rationale behind the cause
(6 marks)
- b) Contract porosity occurs due to under packing material, what can a technician do to prevent this?
(2 marks)
- c) To prevent gaseous porosity in a denture what can be done to the process or design?
(3 marks)

Total 11 marks

6. Use a diagram to explain how the freeway space is calculated. Include in your answer what the average space is and why it is important to incorporate this in a denture?

4 marks

7. Identify two reasons why the clinician needs to provide the denture design.

2 marks

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8. 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) Identify the three main types of flange design and the associated dentures?

(6 marks)

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

(1 mark)

Total 9 marks

9. 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 an 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 what occlusal recording should a clinician use and why?

(2 marks)

c) Where should an anterior maxilla 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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- 10.** Cobalt chromium dentures provide a lightweight, retentive alternative to an acrylic denture, consider the design elements below.
- a) Which cobalt chromium major connector should be used with a high lingual fraenum? Explain why. (3 marks)
 - b) What is the purpose of tissue stops being cut into relief wax for the chrome retention? (2 marks)
 - c) What is the benefit of having the relief? (2 marks)
 - d) In relation to clasp design, what does RPI stand for? What is this clasp unit generally used for? (5 marks)
 - e) How far away from the dentition does a major connector need to be placed and why? (2 marks)
- (Total 14 marks)**

- 11.** Consider the below points, which can contribute to patients accepting dentures:
- a) There are a few technical factors, which can influence the success of a clinician fitting a new complete denture. Explain what these are. (3 marks)
 - b) If a technician applies too much pressure during packing an increase in vertical dimension can occur. Provide two reasons why this may happen. (2 marks)
 - c) Mandibular dentures cover a smaller area than the maxillary denture, what can this mean for the underlying tissue and vertical dimension? How can a technician aid in design to prevent issues? (5 marks)

Total 10 marks

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12. Dental Stones 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) Indicate how a technician can aid in treatment planning on a primary cast, if it is noted a patient is having a Cobalt Chromium denture. (4 marks)
- c) Identify the correct stone to use for a model to manufacture a Cobalt Chromium denture, with a justification for this choice. (3 marks)
- d) Due to the contraction associated with curing of traditional heat cured acrylic, suggest an alternative to type III stone. (2 marks)

Total 15 marks

13. Identify the type of retention in the diagram below and identify a benefit of its use.

3 marks



END OF QUESTIONS