

UNIVERSITY OF BOLTON
FACULTY OF HEALTH AND WELLBEING
BSc (HONS) DENTAL TECHNOLOGY
SEMESTER TWO EXAMINATION 2023/2024
PRINCIPLES OF DENTAL AESTHETICS AND
OCCLUSION
MODULE NO: DNT6103/DNT6003

Date: Wednesday 15 May 2024

Time: 2.00 pm – 3.30 pm

INSTRUCTIONS TO CANDIDATES:

There are 10 questions on this paper.

Answer ALL questions.

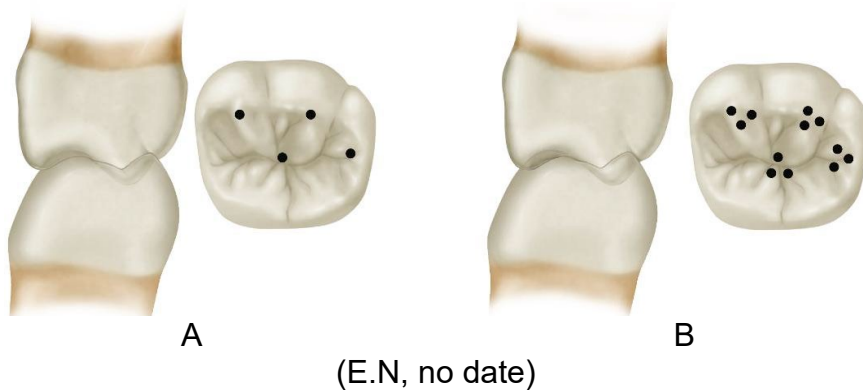
There are a total of 100 marks available.

Marks for parts of questions are shown in brackets.

The pass mark is 40%.

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1. Study the image below.



- a) Identify what each of the images indicates in terms of occlusal relationship. Explain what they would achieve in practice. (7 marks)
- b) Both these occlusal relationships aim to avoid contacts on cusp inclines, why is this? (4 marks)
- c) Provide a brief critique of the occlusal relationships identified in question 1a. (5 marks)

Total 16 marks

2. Therapeutic exercise/physiotherapy is one example of a self-management strategy used in the management of Temporomandibular Disorders/Dysfunction (TMD).

- a) Briefly explain this method of management. (4 marks)
- b) Identify one other self-management strategy used in the management of Temporomandibular Disorder/dysfunction (TMD). (1 mark)

Total 5 marks

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3. Bilaterally balanced occlusion.

a) Define bilaterally balanced occlusion.

(4 marks)

b) How does this occlusal relationship aim to provide stability in removable prosthodontics?

(2 marks)

c) If this occlusal scheme was applied to the natural dentition or fixed restorations, what would be the potential disadvantages of, or issues created by this occlusal scheme?

(4 marks)

d) Name the modification of balanced bilateral occlusion where artificial teeth have fewer intercuspal position (ICP) contacts.

(1 mark)

Total 11 marks

4. Tooth loss may be due to factors such as trauma, ageing or disease. If a patient undergoes extraction of their upper right canine and first premolars, how may lack of appliance or restoration provision impact occlusion, function and the masticatory system?

12 marks

5. Tooth agenesis is an example of a genetic mutation. Outline the symptoms of tooth agenesis and also suggest how these symptoms may impact occlusion.

5 marks

6. A patient presents requiring a series of dental crowns and bridges to completely restore the heavily worn dentition of the upper arch. What type of occlusion will be provided (reorganised or conformative)?

1 mark

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7. Hard-acrylic occlusal splint

- a) A hard-acrylic occlusal splint may be utilised in the management of what condition associated with temporomandibular disorder/dysfunction (TMD)?

(1 mark)

- b) What advantages does a hard-acrylic occlusal splint have over a soft occlusal splint?

(10 marks)

Total 11 marks

8. Development, Disease, Genetics and Occlusion:

- (a) How may occlusion be influenced by excessive condylar head growth during embryonic development?

(2 marks)

- (b) A patient has premature loss of the maxillary deciduous molars due to caries. Outline the eruptive and occlusal issues associated with this loss.

(5 marks)

- (c) A patient loses part of their hard palate and dentition due to oral cancer. Suggest an appropriate appliance to manage this. Include a rationale for the appliance selected.

(4 marks)

- (d) List three dental or occlusion-based characteristics of Marfan Syndrome

(3 marks)

- (e) Propose an orthodontic appliance to correct the dental/occlusion issues identified in 8d, and explain how the appliance manages the issues.

(3 marks)

Total 17 marks

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9. Articulators.

(a) A complex case arrives in the laboratory requiring full-mouth fixed restorations in a patient with Temporomandibular Disorders/Dysfunction (TMD). Your laboratory only has average value and semi-adjustable articulators. Which of these articulators would be the most suitable to use for this case and why?

(8 marks)

(b) Which mechanical articulator is incapable of reproducing excursive and protrusive movements?

(1 mark)

(c) Evidence knowledge of fully adjustable articulators through evaluation of their mechanical function and capacity to reproduce mandibular movements.

(11 marks)

Total 20 marks

10. Mutually Protected Occlusion & the Natural Dentition.

a) True or false. A mutually protected occlusion is commonly found in the natural dentition?

(1 mark)

b) Which alternative occlusal arrangement/scheme would result in molars and premolars being subjected to greater horizontal and potentially more pathologic forces?

(1 mark)

Total 2 marks

END OF QUESTIONS