

**UNIVERSITY OF BOLTON**

**QUEENS DENTAL SCIENCES CENTRE**

**BSc (HONS) DENTAL TECHNOLOGY**  
**BSc (HONS) DENTAL TECHNOLOGY TOP-UP**

**SEMESTER TWO EXAMINATION 2024/2025**

**PRINCIPLES OF DENTAL AESTHETICS AND**  
**OCCLUSION**

**MODULE NO: DNT6103/DNT6003**

Date: Monday 12 May 2025

Time: 10.00 am – 11.30 am

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**INSTRUCTIONS TO CANDIDATES:**

There are 12 questions on this paper.

Answer ALL questions.

There are a total of 100 marks Available.

The pass mark is 40%.

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1. During complete denture manufacture, how are stability and function achieved and what should the occlusal scheme feature?

**5 marks**

2. A patient undergoes a partial maxillectomy due to oral cancer, losing a portion of their hard palate which is replaced with an obturator as part of management of the resultant defect. Name each of the three stages of obturator and provide the timeframe for the provision of each.

**6 marks**

3. Management of Temporomandibular Disorder/Dysfunction (TMD).
  - a) Intramuscular Botox injections are one example of a medical treatment used in the management of TMD. Briefly explain this method of management.

(6 marks)

- b) Identify four other medical treatments and self-management methods of TMD management.

(4 marks)

- c) A soft occlusal splint is an appliance-based method of managing TMD. Outline five advantages of this appliance.

(5 marks)

- d) Outline five disadvantages of soft occlusal splints.

(5 marks)

**Total 20 marks**

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4. Tooth wear

- a) What is the difference between pathological tooth wear and physiological tooth wear?  
(2 marks)
- b) Aetiology of tooth wear may be multifactorial, where both chemical and mechanical wear are present, why may a mouthguard present an issue?  
(2 marks)

**Total 4 marks**

5. Articulators

- a) Evidence knowledge of Simple Hinge dental articulators through critique of their mechanical function, characteristics, and capacity to reproduce mandibular movements.  
(7 marks)
- b) Suggest why an Average Value dental articulator may be preferable to a Simple Hinge articulator.  
(2 marks)

**Total 9 marks**

6. Mutually Protected Occlusion & the Natural Dentition.

- a) Define mutually protected occlusion.  
(5 marks)
- b) List the five features of a mutually protected occlusion.  
(10 marks)

**Total 15 marks**

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7. Conformative or reorganised treatments in fixed prosthodontics are aimed at optimising occlusion.

a) Which of these treatments is less invasive, conformative or reorganised?

(1 mark)

b) List the indications for conformative treatments.

(5 marks)

**Total 6 marks**

8. Age may impact orofacial tissues in a variety of ways, two examples of age-related issues are listed below. Address each of the age-related issues individually by suggesting appropriate fixed restoration(s) and/or removable appliance(s) which may be used in their treatment/management. Provide a clear rationale of how the restoration(s)/appliance(s) manage the issue.

A. Facial atrophy in an edentulous patient.

B. Reduced vertical dimensions due to age related occlusal wear of the natural dentition in a dentate patient.

**6 marks**

9. Axial loading

a) What is axial loading and why is it important?

(6 marks)

b) Name the two methods/contacts used in achieving cusp-tip-to-flat-surface axial loading when designing the occlusal relationship of fixed restorations.

(2 marks)

c) In a wear free Angle's class one occlusion, what type of occlusal relationship in relation to axial loading may most often be observed?

(1 mark)

d) A patient requires freedom in centric occlusion, why is tripodization of the occlusal scheme contraindicated?

(1 mark)

**Total 10 marks**

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10. Identify the three perpendicular reference planes of mandibular movement from the list below.

**3 marks**

- A. Sagittal
- B. Horizontal
- C. Facial
- D. Longitudinal
- E. Frontal
- F. Vertical

11. Temporomandibular Disorders/Dysfunction (TMD).

a) TMD may be due to trauma. What are the three categories of trauma? Also give an example of each.

(6 marks)

b) TMD may be due to stress. Briefly explain why.

(2 marks)

c) True or false, TDM is always unilateral.

(1 mark)

**Total 9 marks**

12. Cleidocranial Dysplasia is a genetic defect characterised by the delayed eruption of the upper central incisors. This may be managed by prosthetic appliance provision during adolescence. List seven possible impacts Cleidocranial Dysplasia may have on a patient.

**7 marks**

**END OF QUESTIONS**