UNIVERSITY OF GREATER MANCHESTER

QUEENS DENTAL SCIENCES CENTRE

BSc (HONS) DENTAL TECHNOLOGY

SEMESTER TWO EXAMINATION 2024/2025

DENTAL TECHNOLOGY TECHNIQUES FOR ORTHODONTICS

MODULE NO: DNT5105

Date: Friday 16 May 2025 **Time: 10.00 am – 12.00 noon**

INSTRUCTIONS TO CANDIDATES:

There are 13 questions on this examination paper.

Answer ALL questions on this examination paper.

There are a total of 100 marks available.

The pass mark is 40%

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1) What is a fixative component? Give 2 examples.

4 Marks

2) When soldering 2 components together what is the importance of using anti-flux? Your answer should include an example of an anti-flux.

3 Marks

3) Active components for removable appliances are made in an activated state. True or false?

1 Mark

4)
   a) Define what a functional appliance is, its mode of action and use.

(12 Marks)

   b) When is the optimal age for a functional appliance to be prescribed and why?

(6 Marks)

   c) Name 4 different functional appliances.

(4 Marks)

Total 22 Marks

5) Is the fulcrum point the point at which the force from an active component is applied? Yes, or no?

1 Mark

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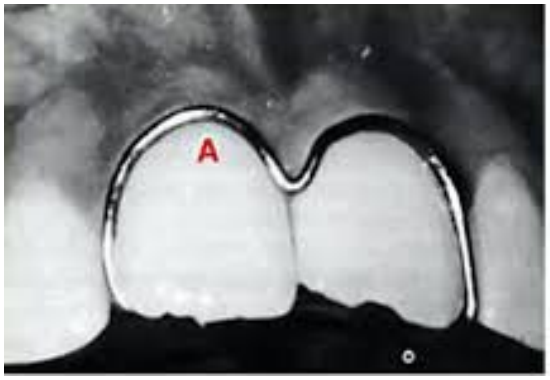
6) Study the image below.



Dental Elementary

a) What is the component shown in the image?

(1 Mark)

b) Which gauge of wire would this component usually be made from?

(1 Mark)

c) When would this component be used?

(4 Marks)

d) Define the term resistance to vertical displacement.

(4 Marks)

e) Which area of a tooth is utilised to resist vertical displacement of an appliance?

(2 Marks)

Total 12 Marks

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7)

a) Define what is meant by the term anchorage.

(3 Marks)

b) Intra-oral anchorage can be either simple or reciprocal. Differentiate between these two terms to show your understanding of them.

(7 Marks)

c) Give an example for a case in removable orthodontics where simple anchorage is used and a case where reciprocal anchorage is used.

(4 Marks)

d) Name 2 of the ways that anchorage can be preserved.

(2 Marks)

Total 16 Marks

8)

a) Where should an active component such as a “Z” spring be placed on a tooth to ensure it functions correctly?

(3 Marks)

b) How could the active element of an active component be protected in the production process of making a removable orthodontic appliance?

(3 Marks)

Total 6 Marks

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9) Name 4 of the main advantages of using intra-oral scanning in the production of orthodontic models?

4 Marks

10) When a force is applied to a lateral incisor by a “Z” spring in a removable orthodontic appliance the supporting tissues of that tooth will show a reaction to that force.
Explain the process, with the aid of a diagram, of what is occurring in the supporting tissues as a result of this force application.

15 Marks

11)

a) Which component could be incorporated into an upper removable appliance to enable the disengagement of the posterior teeth?

(1 Mark)

b) How would this component from part a) achieve this?

(6 Marks)

Total 7 Marks

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12)

a) The term translation when describing orthodontic tooth movement refers to which kind of tooth movement?

(1 Mark)

b) Which group of orthodontic appliances provide this type of tooth movement?

(1 Mark)

Total 2 Marks

13) The labial bow is a versatile component used in removable orthodontic appliances.

a) How and why is it used in its passive state and on which upper removable appliance?

(4 Marks)

b) Which feature of a labial bow allows ease of adjustment to make it either a passive or active component of a removable appliance?

(1 Mark)

c) Briefly describe how the labial bow is adjusted to change it from a passive component to an active component.

(2 Marks)

Total 7 Marks

TOTAL MARKS - 100

END OF QUESTIONS