

BDS FINAL PROFESSIONAL EXAMINATION 2007

Prosthodontics (SEQS)

Model Paper

SECTION I

COMPLETE DENTURES

QUESTION NO 1:

Biometric guides is one of the methods of designing complete dentures. Enumerate the biometric guides and discuss the role of remnant of the lingual gingival margin in the bucco-lingual placement of prosthetic teeth.

ANSWER:

- The biometric guides
- The form of lips
- The naso labial angle
- The horizontal labial angle
- The effect of nose form and angle of inclination of teeth
- The relationship of maxillary incisors to the incisive papilla
- The location of the lingual gingival margin
- The placement of lower teeth in relation to the lower edentulous ridge, tongue, cheeks and lips.

Role of remnant of the lingual gingival margin

- Cord like elevation on the maxillary ridge.
- The facial surfaces of the central and lateral incisor --- approx 8 to 10 mm from LGM.
- The facial surface of canine --- approx 9mm
- The buccal surface of first pre molar --- approx 10mm
- The buccal surface of second pre molar --- approx 11mm
- The buccal surface of first molar --- approx 12mm
- The buccal plain -- the maximum prominences of the buccal surfaces of pre molars and the maximum buccal contour of the mesio-buccal cusp should be in a straight line

BDS FINAL PROFESSIONAL EXAMINATION 2007

Prosthodontics (SEQS)

Model Paper**QUESTION NO 2:**

A 55 yr old complete denture wearer female reports for replacement dentures. Examination reveals inflammation of the denture bearing area with hyper plastic peripheral tissue and dirty dentures. What is this phenomenon called? Give its causes and briefly describe Newton's classification?

ANSWER:

(i) Denture Stomatitis

(ii) Causes

(a) Local factors

- Dentures (changes in environmental conditions, trauma, continuous denture usage, un-cleaned denture, loose ill-fitting)
- Candidal infection
- Xerostomia (irradiation, drug therapy)
- High-Carbohydrate diet

(b) Systemic factors

- Old age
- Diabetes mellitus
- Nutritional Deficiencies (iron, folate or vitamin B₁₂)
- Malignancies (acute leukemia, agranulocytosis)
- Steroids
- Immune effects

(c) Psychogenic factors

- (iii) Newton's Classification:

- Type I: A localized simple inflammation or pinpoint hyperemia
- Type II: Diffuse erythematous denture bearing mucosa
- Type III: Inflammatory papillary hyperplasia

BDS FINAL PROFESSIONAL EXAMINATION 2007

Prosthodontics (SEQS)

Model Paper

QUESTION NO 3:

Impression is an important procedure for the subsequent fabrication of oral prosthesis. What are the objectives and procedure of making secondary edentulous impression of mandibular arch?

ANSWER:

(i) Objectives

- Tissue must be healthy
- Impression should extend within the limits of health and function of supporting tissues
- The borders must be in harmony with anatomical and physiological limitations
- Physiological type of border molding procedure should be performed
- Proper space should be present for the selected impression material
- Selective pressure should be placed
- Impression must be removed from the mouth without damage to mucous membrane
- The tray material should be dimensionally stable
- External shape of impression must be similar to the peripheral attachments

(ii) Procedure of secondary impression of mandibular arch

- Initial impression
- Construction of special tray with spacer
- Reduce the tray to 2-3 mm from the actual line of finished denture border.
- Green stick tracing of the periphery with functional movements and border molding.
- After recording the periphery take the impression of the fitting surface with Zinc oxide impression paste doing all the movements mentioned
- After the set of the material take out from patient's mouth and pour the cast

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Prosthodontics (SEQS)

Model Paper

QUESTION NO 4:

A patient with recent complete denture reports for a first review appointment complaining of loose dentures. What is the protocol for rectifying this post insertion complaint?

ANSWER:

Check for

- Occlusal imbalance and occlusal errors
- Looseness of dentures on opening and closing of the mouth
- Overextension of the denture bases
- Under extension of the denture bases
- Lack of saliva
- Wrong positioning of teeth causing restriction to the tongue movement
- Breakage of seal due to coughing and sneezing:

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Prosthodontics (SEQS)

Model Paper

QUESTION NO 5:

For proper functioning of complete denture jaw registration is an important procedure. What are the procedures ensuring adequate recording of vertical dimension of occlusion?

ANSWER:

1. Mechanical methods:

- Pre extraction records such as models, old dentures and old photographs
- Cast of teeth in occlusion.
- Facial Measurements.
- Ridge relations
- Parallelism of the ridges
- Measurement of the former dentures

2. Physiological Methods

- Physiological rest position
 - Using Willi's gauge method.
 - Using Niswanger's method
 - Using Boo's method.
- Phonetics
- Esthetics
- Using wax rims made of Alu wax and instructing the patient to swallow, which will help in reducing the occlusal rims to the appropriate vertical height
- By patients own judgments i.e. various trials of vertical dimensions presented to him to point out the most preferred one.

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Prosthodontics (SEQS)

Model Paper

QUESTION NO 6:

Define support, retention, occlusal balance and muscle balance. How does muscle balance help in the stability of complete denture?

ANSWER:

a. Definitions

- Support: Foundation on which the denture rest
- Retention: Resistance of the denture to removal from the mouth
- Occlusal Balance: Implies that the force exerted by one denture on the other act in such a way that the dentures are not dislodge during functional movements of the jaw with the teeth in contact.
- Muscle Balance: Implies that the muscular forces of the tongue, lips and cheek act on the denture in such a way that the denture is not dislodge during functional movements

b. Identifying neutral zone / denture space

c. Positioning of the artificial teeth in the position of their natural predecessor

d. Reproducing functionally generated polished surfaces of the denture

BDS FINAL PROFESSIONAL EXAMINATION 2007
Prosthodontics (SEQS)

Model Paper

QUESTION NO 7:

Draw and label the anatomical landmarks of a maxillary edentulous arch. How will you achieve physiological compression in maxillary complete denture?

ANSWER:

(i) Anatomical landmarks:

- Labial frenum
- Labial sulcus
- Buccal frenum
- Buccal sulcus
- Incisive papilla
- Anterior residual alveolar ridge
- Rugae
- Median palatine raphe
- Posterior residual alveolar ridge
- Maxillary tuberosity
- Fovea palatine
- Hamular notch

(ii) Physiological compression

- Make the special tray from the initial; impression and trim that to 2-3 mm
- Green stick tracing all around the periphery, border molding.
- Application of impression paste on the periphery.
- Removal of excess impression paste from the inner surface of the tray
- Overall final impression

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Prosthodontics (SEQS)

Model Paper

SECTION II

PARTIAL DENTURE

QUESTION NO 8:

A patient presents with a Kennedy's class I clinical scenario wishes a cast partial denture. What design features would you incorporate in the fabrication of lower cast partial denture?

ANSWER:

- Maximum extension of denture base.
- Narrow occlusal table.
- RPI clasp system.
- Dental connector and a sublingual bar

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Prosthodontics (SEQS)

Model Paper

QUESTION NO 9:

A 12 yr old child with a missing central incisor wishes for a removable prosthesis. What in your opinion is the appropriate choice of removable prosthesis for a growing child? Discuss the design feature?

ANSWER:

- Spoon denture.
- Proper extension of labial flange.
- 3—4 mm gingival relief.
- Posterior edge should be on the vibrating line.
- May or may not have Cingulum rest on adjacent teeth.
- Pin damming.

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Prosthodontics (SEQS)

Model Paper

QUESTION NO 10:

Acrylic removable partial dentures are considered to be gum strippers and have adverse effect on the supporting mucosa. However "Every Denture" has design features which are tissue friendly. Discuss the design features of every denture for a patient with maxillary multiple saddles

ANSWER:

DESIGN FEATURES

- Point contact between adjacent standing and artificial teeth – to reduce lateral stresses to a minimum
- Wide embrasures or "open" design of saddle / tooth junction is employed
- For restoring multiple bounded saddles
- Free occlusion – lateral stresses are reduced by achieving as much balanced occlusion and articulation
- All denture borders are at least 3-4mm from the gingival margin
- Posterior wire stops to prevent distal drift of the posterior teeth with subsequent loss of contact points
- Flanges are added to assist the bracing of the denture
- Maximum retention following the principles used in full denture construction

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Prosthodontics (SEQS)

Model Paper

QUESTION NO 11:

What are the factors which influence the support of a distal extension base in Kennedy's class II clinical scenario?

ANSWER:

Factors

- Contour and quality of the residual ridge
- Extent of residual ridge coverage by the denture base.
- Type and accuracy of the impression registration
- Accuracy of the fit of the denture base.
- Design of the removal partial denture framework
- Total occlusal load applied.

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Prosthodontics (SEQS)

Model Paper

SECTION III

QUESTION NO 12:

A patient presents to you with a classical feature of Combination (Kelly's) syndrome. Enumerate the classical feature presented and briefly describe the impression procedure for fabrication of upper complete denture?

ANSWER:

Classical features

- (i) The changes are usually interrelated both in the maxilla and mandible
 - a. Bone resorption in the mandibular bilateral saddle areas
 - b. Over erupted /extrusion of lower anterior teeth
 - c. Periodontally involved standing lower anterior teeth
 - d. Maxillary anterior flabby tissue
 - e. Loss of bone from the maxillary anterior ridge
 - f. Pendulous tuberosities
 - g. Down growth of the maxillary tuberosities
 - h. Papillary hyperplasia of the tissues of the hard palate
 - i. *Associated Changes e.g.* Loss of vertical dimension of occlusion, Occlusal plane discrepancy, Poor adaptation of the prosthesis and Epulis fissuratum

(ii). Impression Procedures

- a. Modified impression techniques
- b. Selective pressure impression technique, perforated or vent holes impression tray, window impression tray
- c. Impression plaster
- d. Type IV rubber base impression material etc.

BDS FINAL PROFESSIONAL EXAMINATION 2007
Prosthodontics (SEQS)

Model Paper

QUESTION NO 13:

A patient has come with a mutilated dentition. What are the possible causes and treatment options available for such patients?

ANSWER:

(i) Causes:

- Neglect.
- Poor oral hygiene.
- Para functional activity.
- Periodontal involvement.
- Associated pathology.
- Trauma.

(ii) Treatment Options:

- Removable Prosthodontics
- Fixed Prosthodontics
- Combination of removable and fixed Prosthodontics e.g.
 - Complete dentures, Partial dentures
 - Reduction of clinical crown & partial or complete overdentures , partial or complete overlay/onlays
 - Restoration of anterior teeth using crown, bridges or veneer.
 - Restoration of acquired and congenital defects with removable prosthesis (obturator).

BDS FINAL PROFESSIONAL EXAMINATION 2007
Prosthodontics (SEQS)

Model Paper

QUESTION NO 14:

Young patient with a history of trauma presents to you with grade 3 mobility of upper anterior incisors. The recommended treatment is an immediate dentures. What are the advantages and disadvantages of this treatment modality?

ANSWER:

Advantages

1. Maintenance of appearance and aesthetic
2. Facial muscular support
3. Maintenance of occlusal vertical dimension
4. Reduced post operative pain
5. Protection of surgical site
6. Acts as a surgical splint
7. Accurate replication of size, shape, form, position and shade of the teeth
8. Easy adaptation to the prosthesis

Disadvantages

1. A deep irregular anterior undercut may be produced interfering with the impression procedures and insertion of the denture
2. Inability to accomplish a tooth try-in
3. More chair time
4. Increased cost
5. Additional appointments
6. Speech and phonetics may be impair

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Prosthodontics (SEQS)

Model Paper

QUESTION NO 15:

What is maxillofacial prosthetics?. Give its objectives and classify intra oral defects in relation to remaining standing teeth.

ANSWER:

- (i) Definition
 - i. It is art and science of anatomic, functional and cosmetic reconstruction by non living substitutes

- (ii) Objectives
 - Restoration of:
 - i. Lost skeletal tissue
 - ii. Teeth
 - iii. Speech
 - iv. Appearance
 - v. Deglutition
 - vi. Morale and psychological confidence

- (iii) Classification in relation to remaining teeth
 - i. Midline resection
 - ii. Unilateral resection
 - iii. Central resection
 - iv. Unilateral anterior posterior resection
 - v. Posterior resection
 - vi. Anterior resection