CMSA

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**JOHANNESBURG**
***ACADEMIC OFFICE***

**February 2019**

# R E G U L A T I O N S

## FOR ADMISSION TO THE FELLOWSHIP OF THE COLLEGE OF DENTISTRY OF SOUTH AFRICA

# FCD(SA) Pros

The examination comprises Part I and Part II : Part II must be passed within six years of passing Part I

## 1.0 PURPOSE OF ASSESSMENT

1.1. This qualification forms part of the process to accredit dental practitioners as Prosthodontists.

## 2.0 ADMISSION TO THE PART I EXAMINATION

(to be read in conjunction with the Instructions)

2.1 The candidate must be in possession of a qualification which entitles the holder thereof to register as a dentist with the Health Professions Council of South Africa

2.2 The CMSA Senate, through its Examinations and Credentials Committee, will review all applications for admission to the examination and may also review the ethical and professional standing of candidates

2.3 **SYLLABUS OF THE PART I EXAMINATION**
See Appendix A

2.4 **FORMAT OF THE PART I EXAMINATION**

2.4.1 One written papers of 3 hours' duration on Anatomy, Embryology, Histology and Oral Biology
2.4.2 One written papers of 3 hours' duration on Physiology
2.4.3 One written papers of 3 hours'[1] duration on the principles of Pathology including Microbiology.
2.4.4 If a candidate is unsuccessful in either one of the Part I subjects, credit will be given for the subject(s) passed (minimum of 50%), and he/she will be able to re-write the failed subject(s). This exemption is only valid for two examination periods. If the candidate is again unsuccessful with one or two of these subjects, the entire examination will have to be taken at the next attempt, with only one extra attempt.

## 3.0 ADMISSION TO THE PART II EXAMINATION

3.1 The College Council, through its Examinations and Credentials Committee, will review all applications for admission to the examination and may also review the professional and ethical standing of candidates.

3.2 A candidate may be admitted to the examination after fulfilling all the following criteria:

3.2.1 Registration as an Independent Dental Practitioner or as a Postgraduate Candidate with the Health Professions Council of South Africa (HPCSA).

**3.2.2…/**

[1] Change of paper duration.

3.2.2 Evidence of having passed, within the previous 6 years, the Primary subjects of Anatomy and Physiology from a South African Dental School or equivalent courses as approved by the Council of the College.

3.2.3 Evidence of holding a full time appointment as a registrar or supernumerary registrar in an accredited Prosthodontic programme at a South African dental school for four years.

3.2.4 Evidence of having achieved success in continuous assessment throughout the course, representing the candidate's achievements in, *inter alia*, the clinical work, presentation of projects, assignments, written and oral seminars, and having produced a reflective portfolio of all cases carried out during training, as confirmed by duly completed statement from the Head of the academic programme. The case portfolio to be made available to the examiners in electronic form at least two weeks before the examination.

3.2.5 A compilation of five cases for presentation at the examination in written and presentation (PowerPoint® or equivalent) form and which will be made available to the examiners in electronic form at least two weeks before the examination.

3.2.6 A compilation of a Portfolio of Learning which includes teaching assignments for presentation at the examination in written and electronic (MSWord® or Adobe Acrobat®) form and which will be made available to the examiners in electronic form at least two weeks before the examination. It is recommended that all candidates entering into their registrar training from 1 January 2019 use the LogBox online portfolio. This is a free service and the app is available in both Apple and Android format. Please register at www.logbox.co.za. [2]

3.2.7 Evidence of a passing mark having been achieved for a research report / mini thesis / minor dissertation.

3.2.8 Official institutional permission from the Head of the programme, Head of School and Head of Faculty where applicable, that the candidate has fulfilled all the requirements above, and may present for the national professional examination.

3.3 **SYLLABUS OF THE PART II EXAMINATION**
See Appendix B

## 4.0 FORMAT OF THE PART II EXAMINATION

4.1 Two 3-hour written papers comprising short answer questions and questions based on clinical scenarios. The two papers will be subject to a standards setting exercise (see Appendix E).

4.2 A portfolio of all work done throughout the course including all clinical cases, seminars, lectures given, etc.

4.3 The oral presentation of 5 completed clinical cases, chosen by the candidate. These presentations will afford the examining panel the opportunity to further probe the candidate's knowledge of aspects related to the cases.

4.4 The presentation of a rapid diagnosis and alternative treatment plans for a paper-based unseen patient. During this presentation, once again related aspects will be discussed.

## 5.0 FINAL MARK FOR THE PART II EXAMINATION

The final mark shall comprise the following components:

| | |
|---|---|
| Written papers | 40% |
| Portfolios | 20% |
| Case presentations | 30% |
| Unseen patient | 10% |

A final aggregated mark of 50% is required to pass the examination

**JOHANNESBURG**
**November 2018**

[2] LogBox recommendation effective for new Registrars – 1 January 2019

## 6.0 ADMISSION AS A FELLOW

6.1 Only candidates who have completed training in a CMSA recognised registrar post may be awarded a fellowship if successful in the examination.

6.2 **Candidates who have written the examination as a prerequisite from the HPCSA for inclusion on the specialist register are not eligible to be awarded a Fellowship but will be sent a letter confirming their success in the examinations**

All other candidates will be asked to sign a declaration as below:

I, the undersigned, …… do solemnly and sincerely declare

that while a member of the CMSA I will at all times do all within my power to promote the objects of the CMSA and uphold the dignity of the CMSA and its members

that I will observe the provisions of the Memorandum and Articles of Association, By-laws, Regulations and Code of Ethics of the CMSA as in force from time to time

that I will obey every lawful summons issued by order of the Senate of the said CMSA, having no reasonable excuse to the contrary

and I make this solemn declaration faithfully promising to adhere to its terms

Signed at ……..……. this …… day of

…… 20 ……..

Signature …..……

Witness ……
(who must be a Founder, Associate Founder, Fellow, Member, Diplomate or Commissioner of Oaths)

6.3 A two-thirds majority of members of the CMSA Senate present at the relevant meeting shall be necessary for the award to any candidate of a Fellowship

6.4 A Fellow shall be entitled to the appropriate form of certificate under the seal of the CMSA

6.5 In the event of a candidate not being awarded the Fellowship (after having passed the examination) the examination fee shall be refunded in full excluding HPCSA candidates who are not entitled to a Fellowship.

6.6 The first annual subscription is due one year after registration (statements are rendered annually)

## 7.0 AWARD OF POSTGRADUATE MASTERS DEGREE

Upon successful completion of this National Professional Examination the candidate's home institution will confer the appropriate Master's degree. The final mark for awarding the degree will conform to each University's requirements in terms of grades or categories, or criteria for awarding for example, a distinction.

# A P P E N D I X A:

## SCOPE OF THE PART I EXAMINATION

### 1.0 ANATOMY

**Recommended text book for Anatomy, Embryology, Histology, Oral Biology:**

Fundamentals of Anatomy and Physiology
Martini, Nath, Bartholomew
11th Edition
Pearson.[3]

| | | |
|---|---|---|
| 1.1 | **Head**: | Surface anatomy<br>Osteology of calvaria, especially base of skull and temporal region; upper mid and lower face, orbit, nasal cavity; mandible; individual bones of the skull<br>The scalp<br>Temporomandibular articulation<br>Muscles: of mastication, facial, of tongue, of palate<br>Contents of orbit<br>Nasal cavity and paranasal air sinuses<br>Pterygopalatal fossa, infratemporal fossa<br>Structures of the oral cavity: lips, cheeks, tongue, floor of mouth, palate, teeth, gingivae<br>Salivary glands<br>Ear, external and middle<br>Oropharynx<br>Blood vessels and nerves<br>Blood and nerve supplies, lymphatic drainage, relations, variations<br>Neurocranial contents<br>Brain stem<br>Cranial nerves<br>Major intracranial vessels and sinuses<br>Radiology anatomy of head |
| 1.2 | **Neck:** | Surface anatomy<br>Osteology of cervical vertebrae, hyoid<br>Muscles<br>Triangles of the neck, and contents<br>Larynx and trachea<br>Laryngopharynx and upper oesophagus<br>Thyroid and parathyroids<br>Blood vessels and nerves<br>Blood and nerve supplies, lymphatic drainage, relations<br>Radiological anatomy |
| 1.3 | **Thorax:** | Surface anatomy<br>Thoracic wall<br>Diaphragm, intercostal muscles and accessory muscles of respiration<br>Trachea, lungs, pleural cavities<br>Mediastinum including heart and great vessels, oesophagus<br>Blood and nerve supplies, lymphatic drainage, relations<br>Radiological anatomy |

### 2.0 EMBRYOLOGY

| | | |
|---|---|---|
| 2.1 | **General knowledge:** | Early embryological events<br>Cardiovascular system<br>Respiratory system<br>Gastrointestinal system |

2.2…/

[3] Updated recommended reading

2.2 **Detailed knowledge:**

Development of pharyngeal (branchial) arches
Pharyngeal arch derivatives
Development of pharyngeal pouches: middle ear, tonsil thymus, parathyroid, ultimobrachial body
Other pharyngeal derivatives especially thyroid
Development of face, jaws, oral and nasal cavities and paranasal sinuses, tongue and palate, salivary glands, pharynx
Development of blood and nerve supplies and muscles of the face of mastication and of the tongue
Development of teeth, including role of ectomesenchyme and determination of crown pattern
Development of periodontium
Tooth eruption
Osteogenesis, cementogenesis, amelogenesis, dentinogenesis
Development of temporomandibular joint
Development of cranium

## 3.0 HISTOLOGY

3.1 **General knowledge:**

Primary tissues: epithelia, connective tissues and blood, nerve tissue, muscle
Skin
Cardiovascular system
Respiratory tract
Endocrine system (especially thyroid, parathyroid, pituitary)
Lymphoreticular system

3.2 **Detailed knowledge:**

Tooth: enamel, cementum, dentine, pulp
Periodontium: junctional and sulcular epithelium, gingival fibre system, cementum, periodontal ligament, alveolar bone
Cheeks, lips, tongue, floor of mouth, palate
Salivary glands
Cartilage, bone, sutures
Striated muscle

## 4.0 ORAL BIOLOGY

4.1 **Basic genetic mechanisms:**

Nucleic acids, biosynthesis of protein; cell growth, division and control
Important development syndromes of head and neck and genetics of inheritance of major developmental abnormalities

4.2 **Differentiation and maintenance of tissues:** cell turnover; permanent cells; renewal by duplication, stem cells, pluripotential cells

4.3 **Cellular ultrastructure**

cell membrane and glycocalyx
cilia, flagella, kinetosomes, microvilli and intercellular junctions
cytoplasmic compartment, organelles, sites of metabolic activity
nuclear compartment, envelope, chromatin and nucleolus
cytoskeleton

4.4 **Cellular communication**

transmembrane transport mechanisms
chemical mediators, hormones, neurotransmitters, intracellular and surface receptors (steroids and peptides), target cell adaptation
extracellular components: fibres, ground substance, attachment glycoproteins
epithelium-mesenchymal interactions

4.5…/

4.5 **Oral epithelium**

keratinocytes
non-keratinocytes ("clear cells")
intercellular junctions
junctional epithelium and epithelial attachment
patterns of epithelial differentiation and maturation
permeability
epithelium of "specialised" mucosae
Interface between oral epithelium and connective tissue/tooth

4.6 **Connective tissues of the oral mucosa and periodontium**

The cells
The fibres
The ground substance
The blood and lymph vessels
The nerves
Regional differences and functions of oral mucosa
Mechanisms of tooth support
Gingival fluid
Ageing of oral tissues

## 5.0 PHYSIOLOGY

5.1 **Basic cell functions:**

Cell structure
Chemical composition of the body
Molecular control mechanisms - DNA and proteins
Energy and cellular metabolism
Movement of molecules across cell membranes

5.2 **Control systems:**

Neural control mechanisms
Hormonal control mechanism
Muscle

5.3 **Co-ordinate body functions:**

Circulation and blood
Respiration and blood
Regulation of water and electrolyte balance
Digestion and absorption of food
Defence mechanisms: immunology
Sensory systems
Body movement
Consciousness and behaviour

5.4 **Oral physiology:**

Composition and functions of saliva
Swallowing and chewing
Oral sensation
Mineralisation of teeth and ossification
Hormonal and dietary influences on oral tissues
Growth

## 6.0 PRINCIPLES OF PATHOLOGY INCLUDING MICROBIOLOGY

**Recommended text books:**
Robbins Basic Pathology.
Robbins, Kumar, Cotran (Editors).
7th Edition
Philadephia, Pa., London, Saunders 2003.
Rippey JJ
Illustrated lecture notes General Pathology.
2nd Edition 1994.[4]

6.1…/

[4] Updated recommended reading

6.1 **Cell injury and cell death:**
- Cell injury and necrosis;
- Apoptosis;
- Sub-cellular responses to cell injury;
- Ionising radiation

6.2 **Adaptions, intracellular accumulations and cell ageing:**
- Cellular adaptations of growth and differentiation;
- Intracellular accumulations;
- Pathologic calcification;
- Hyaline change;
- Cellular ageing;
- Pigments

6.3 **Inflammation:**
- Acute inflammation;
- Chronic inflammation;
- Chemical mediators;
- Morphologic patterns

6.4 **Infectious diseases:**
- Transmission and dissemination of microbes;
- How microorganisms cause disease;
- Immune evasion by microbes;
- Spectrum of inflammatory responses to infection;
- Acute pyogenic infections, wound infections and hospital infections;
- Principles of disinfection and sterilisation;
- Antibacterial chemical agents;
- Opportunistic infections;
- Hepatitis;
- AIDS

6.5 **Diseases of immunity:**
- General features of the immune system;
- Disorders of the immune system (hypersensitivity reactions);
- Autoimmune diseases;
- Immunologic deficiency syndromes;
- Amyloidosis

6.6 **Genetic disorders:**
- Mutations, Mendelian disorders;
- Disorders with multifactorial inheritance;
- Cytogenetic disorders;
- Molecular diagnosis;
- Diagnosis of genetic disorders

6.7 **Tissue repair:**
- Control of normal cell growth;
- Extra cellular matrix and cell-matrix interactions;
- Repair by connective tissue (fibrosis);
- Wound healing

6.8 **Neoplasia:**
- Characteristics of benign and malignant neoplasms;
- Epidemiology;
- Molecular basis of cancer;
- Biology of tumour growth;
- Carcinogenic agents and their cellular interactions;
- Host defence against tumours – tumour immunity;
- Clinical features of tumours

6.9…/

6.9 **Blood vessels:**

- Vascular wall cells and their response to injury;
- Vascular diseases;
- Atherosclerosis;
- Hypertensive vascular disease;
- Aneurysms and dissection

6.10 **Haemodynamic disorders:**

- Oedema;
- Hyperaemia and congestion;
- Haemorrhage;
- Haemostasis and thrombosis;
- Embolism
- Infarction;
- Shock

6.11 **The heart:**

- Heart failure ischaemic heart disease;
- Hypertensive heart disease;
- Valvular heart disease

6.12 **Diabetes:**

- Classification and incidence;
- Pathogenesis;
- Morphology;
- Clinical features;
- Complications

# A P P E N D I X B:

## SCOPE OF THE PART II EXAMINATION

**Preamble**

This document sets out the overall curriculum in terms of the experiential requirements of the post-graduate candidate in Prosthodontics. Each University will of necessity also publish separately (and according to its rules and regulations) its own comprehensive study guide setting out the organisational structure of the entire programme, the academic programme, the timing of presentation of the courses, requirements of the candidates, infrastructure available, assessment schedules, etc.

**1.0 Exit level Outcomes / Competencies**

1.1 **Overall objectives**

The objective is to produce knowledgeable and skilled specialists who have developed and formulated their own philosophy through exposure to a wide spectrum of prosthodontic principles, concepts and practises. Learning will mainly be self-directed, and will be promoted through provision of resources, discussion and training. Seminar topics will be allocated to individual candidates who will prepare written and oral presentations. Advanced clinical training will take place with due respect for the individuality of the candidate and with an awareness of the various approaches to solving clinical problems. The implication is, however, that candidates will embark upon their post-graduate studies with an acceptable clinical background and a responsible professional attitude. They are expected to strive for perfection in all that they do.

1.2 **Competencies**

To understand the evolutionary and embryological development of the oral and cranio-facial structures, the stomatognathic system and the natural dentition from a bio-functional perspective.

To know the biological (including anatomical and physiological), and functional principles to be followed in designing appropriate prostheses for the replacement of the oral and cranio-facial structures.

To appreciate the changes in the form and function of the mouth and jaws brought about by loss of teeth and/or oral and cranio-facial structures and the social and behavioural consequences of this loss.

To understand and manage the impact of frailty on the oral health and prosthodontic needs of elderly people.

To understand and be capable of informed discrimination when evaluating the merits of conflicting philosophies with regard to the biological and physical rationale for the clinical and laboratory procedures employed in the construction of different types of prostheses.

To be able to critically evaluate the influence of prostheses on the remaining soft tissues and the underlying supporting structures.

To understand the scope and limitations of different types of prostheses together with the bio-compatibility and physical properties of all materials used in Prosthodontics.

To be able to evaluate the need for prosthodontic intervention and the long-term consequences of any technologies used, and to demonstrate effective use of technology applicable to a given clinical situation.

To be able to document and present, for peer review, evidence-based reviews of the prosthodontic literature.

To acquire and assimilate scientific knowledge and associated clinical experience appropriate to the discipline to be applied in patient assessment.

To demonstrate professional clinical…/

To demonstrate professional clinical reasoning and judgement, and the technical skills required to competently diagnose relevant systemic, oral and dental diseases including oral and cranio-facial defects and anomalies pertaining to the specialty.

To acquire an ability to render an evidence-based best practice comprehensive service to patients who require complex prosthodontic treatment, by managing a multidisciplinary health team, and to produce carefully documented case reports supported by photographic evidence.

To gain an understanding of basic research methodology, and to be able to conceive, develop, and carry out independent research, as evidenced by the production of a research report which, in abridged form, would be acceptable for publication in an international journal.

To have an understanding of the socio-economic consequences of the provision of a comprehensive prosthodontic service for all types of communities, and of the socio-political role of the speciality in relation to national oral health policy and other relevant national legislation.

To be able to evaluate the alternative procedures available for the provision of a prosthodontic service based on appropriate technology for communities with different socio-economic resources.

To know and apply learning techniques and strategies, including assessment and examination techniques.

To know how to engage in lifelong learning through well-developed self-directed learning skills to maintain continued professional development and competence and show a continuous interest in new developments in the specialist field.

To demonstrate professional and ethical behaviour.

## 2.0 Primary Courses

### 2.1 Anatomy

The Anatomy course includes the following topics: anatomy of the head and neck including the cranial nerves; the principles of human genetics; the histology of the primary tissues and of oral structures; and oro-facial embryology.

### 2.2 Physiology

The Physiology course is aimed at providing an overview of the clinical physiology relevant to the practise of dentistry, and includes: basic neurophysiology; autonomic nervous system; respiration; cardio-vascular system; immunology and wound healing; vitamins and minerals; saliva; muscle physiology; mastication; deglutition; and oral sensation.

## 3.0 Major Courses

### 3.1 Techniques (pre-clinical) Courses

#### 3.1.1 Fixed Prosthodontics

*Restorations:*

The construction of at least the following restoration from preparation to delivery including ALL laboratory work:

- A cast gold restoration
- An all-ceramic crown
- A ceramo-metal crown with shoulder porcelain
- An implant-supported crown
- A CAD/CAM restoration

*Provisionals:*

The construction of provisional crowns and bridges by direct and indirect methods

*Cores:*
The construction of a direct post and core.

The placement of a fibre post and composite core.

*Occlusion:*
Face bow transfer and programming of a semi-adjustable articulator

Occlusal analysis exercise on casts mounted on a semi-adjustable articulator, and methods for occlusal equilibration.

Occlusal waxing exercises building up stable, static and dynamic occlusal relationships.

Optional: pantographic recordings and programming of fully adjustable articulator if available.

3.1.2 **Removable Prosthodontics**
*Complete dentures:*
To carry out all the laboratory work for at least one case of complete dentures.

To provide characterisation of gingiva, flange and teeth.

*Partial dentures:*
The production of a minimum of 10 design drawings for each of acrylic- and metal-based dentures

The laboratory procedures for the processing of at least one acrylic-based denture incorporating pre-formed wire components

The observation of all stages in the construction of a cast metal base.

Optional: the observation or use of digital techniques for the production of metal bases by milling or sintering, if available.

*Maxillo-facial prosthodontics:*
The creation of wax replicas for an auricular, nasal, orbital and/or facial prosthesis.

3.1.3 **Implant Dentistry**
The laboratory procedures for one case of a bar and clip retained implant supported overdenture.

3.1.4 **Endodontics**
Proficiency in *foundational* endodontic techniques for single and multi-rooted teeth including:
Case assessment
Radiography
Rubber dam isolation
Magnification using loupes
Conservative access preparation
Electronic apex locators
Chemo-mechanical debridement using conventional stainless steel hand files, Gates-Glidden drills, and sodium hypochlorite irrigant
Preparation concepts such as crown-down and anticurvature filing
Prevention and management of instrument separation
Placement of calcium hydroxide as an intra-appointment intra-canal medicament
Lateral or cold gutta-percha obturation
Post removal
Provisional and definitive restoration.
Familiarity with *advanced* techniques including:
Use of cone-beam CT imaging
Rotary NiTi files
Endodontic microscopes
Ultrasonic instruments
Warm gutta percha and vertical condensation techniques
The use of resinous obturation materials.

3.2…/

3.2 **Clinical Courses**

3.2.1 **Complete Dentures**

A sufficient number of cases of complete dentures with a difficulty factor (for example: extreme residual ridge resorption, neuromuscular disorders, following trauma or cancer, children, immediate dentures, etc.) to show competence.

Competence must be demonstrated in different ways of achieving jaw registration positions using extra-oral and intra-oral registration methods.

Use of different occlusal schemes, in particular cusped articulation and lingualised occlusion, for different skeletal jaw relations and according to clinical indications.

Different techniques must be demonstrated (for example neutral zone technique, Earl Pound speech technique, McCord's "Manchester rims", selective impression techniques / materials, etc.).

A sufficient number of cases to show competence in providing single maxillary dentures opposing natural teeth; immediate replacement dentures; duplication of complete dentures

3.2.2 **Partial Dentures**

A sufficient number of cases to show competence in providing conventional metal-frame partial dentures (using different techniques such as altered cast, dual path of insertion, etc.); the use of precision attachments; overdentures of different designs; acrylic-based dentures with preformed components.

3.2.3 **Fixed Prosthodontics**

The use of face-bow recordings and appropriate inter-occlusal recording materials and methods to mount models on a semi-adjustable articulator, to adjust it appropriately, and to use custom incisal guide tables and diagnostic wax-up procedures.

The use of a suitable scheme to analyse a natural dentition and carry out a systematic adjustment of the natural occlusion to produce an optimum and harmonious occlusal scheme within the patient's stomatognathic system.

Make appropriate recordings, construct, fit, and adjust Michigan type occlusal splints.

A sufficient number of cases to show competence in providing total patient care and interdisciplinary management incorporating the following aspects:

- The rehabilitation of posterior occlusal surfaces using cast restorations
- The restoration of missing teeth by means of resin-bonded retained prostheses, both metal and porcelain based, as well as with the use of polymer impregnated fibres.
- Rehabilitation of the complete dentition with combinations of individual crowns and bridgework
- Rehabilitation of the dentition for a periodontally compromised patient
- Restoration of function for severe attrition
- Restoration of function for severe bone loss
- Cases including the use of implants
- Cases restored using CAD/CAM technology

3.2.4 **Implant Dentistry**

Interdisciplinary planning for the placement of implants, including the use of special investigations such as imaging, rapid prototyping, templates, interim prostheses, etc.

Participation in the surgical procedures for the placement of implants both intra- and extra-orally.

The design and placement of implant retained prostheses for full and partial tooth loss.

The use of removable prostheses over implants, both with individual retainers, bar and clip retainers, ball and precision-attachment retainers, etc.

The restoration of missing …/

The restoration of missing teeth with single and multiple implants.

The fixed restoration of the severely resorbed maxilla and mandible.

Exposure to different technologies for the construction of implant supported prostheses such as CAD/CAM, milling, casting, etc.

The management of complications by treating patients in an implant maintenance clinic.

3.2.5 **Dental Geriatrics**

Dental geriatrics is concerned with the management of oral health and related issues in people who are old and frail. Proficiency in dental geriatrics includes:

Knowledge of the physiology of aging and the influence of medications and disease on oral healthcare for a geriatric population;

Understanding of the delivery of oral healthcare to frail elders;

Management of oral healthcare in geriatric clinics, long-term care facilities, palliative care, and other supportive environments for in-patients and out-patients;

Delivery of oral healthcare to a range of abled and frail elders;

Collaborative practice on inter-professional teams with other healthcare providers in the medical and social services associated with the needs of frail elders.

*Clinical competence* includes:
The modification, adaptation and use of appropriate techniques in the treatment of the elderly patient with a partial or transitional dentition, as well as in the provision of complete dentures for the elderly patient

3.2.6 **Cranio-mandibular disorders and orofacial pain**

A sufficient number of cases to show competence in providing interdisciplinary care, managed and documented.

3.2.7 **Endodontics**

Clinical assessment of teeth with disease of pulpal origin, or prior endodontic treatment, including history, comprehensive endodontic evaluation, and radiography, to make diagnoses, ratings of case difficulty, and prognoses.

Non-surgical endodontic treatment of anterior and posterior teeth with a variety of pulpal and peri-radicular diagnoses.

Non-surgical endodontic retreatment for cases where healing has not occurred including: coronal disassembly, post removal; bypassing blockages, ledges, and separated instruments; internal perforation repair; and identifying previously untreated canals.

Management of endodontic emergencies; dental pain; and teeth recalcitrant to routine local anaesthesia.

Treatment of traumatised teeth and supporting tissues.

Treatment of perio-endo lesions.

Bleaching procedures for vital and non-vital teeth.

3.2.8…/

3.2.8 **Maxillo-facial prosthodontics**

Participation in the planning of cases with different surgical and allied disciplines including the use of special investigations such as imaging, rapid prototyping, templates, interim prostheses, etc.

Colour matching of prostheses to skin tones.

Impressions for the following:

- facial moulage
- undercut lesions (2 or more parts)
- palatal defects
- velo-pharyngeal defects
- optic and orbital defects
- auricular defects

The use of a variety of different speech prostheses.

Restoration of a variety of congenital or surgically created defects such as facial features, maxillectomies, partial and complete mandibulectomies, palatal defects, etc.

The use of a variety of retention devices for prosthesis, both intra- and extra-oral, including the use of implants.

Participation in clinics providing neo-natal care such as for cleft palate patients.

Participation in clinics providing radiation oncology.

The management of radiologically and immunologically compromised patients.

3.3 **Research Report/Mini thesis/Minor dissertation**

Throughout all years of the course the candidate will be exposed to aspects of research methodology including the critical appraisal of research papers, an understanding of systematic reviews and how to undertake them, the role of evidence-based dentistry, and the use of statistical analyses. The research methodology course (an attendance course, see later) is considered to be a part of this component.

A research report (referred to by different Universities as a Report, or Mini-Thesis, or Minor Dissertation), must be produced which shows evidence that the candidate has gained an understanding of basic research methodology, and was able to conceive, develop, and carry out independent research.

This requires the development of a suitable protocol, which must conform to each University's guidelines, and which must be submitted at the appropriate time for approval, prior to conducting the research. The report, in appropriate form, must be acceptable to external examiners according the rules of each University and should have received a mark.

**4.0 Additional / Subsidiary Courses**

These courses are presented separately, and are assessed.

4.1 **Oral Biology/Physiology**

This course includes topics such as the evolutionary and embryological development of the oral and cranio-facial structures, stomatognathic system and the natural dentition; form and function in the stomatognathic system; mastication; oro-facial feedback and defence mechanisms; tissue responses in the oro-facial region; bone growth; orthognathics; etc.

4.2 **Oral Pathology**

This includes topics such as oral mucosal diseases; salivary gland disorders; pathology of dental tissue; pathology of bone and synovium; age changes in the oral tissues; histological diagnostic criteria for hard and soft tissue diseases; radiological signs for differential diagnoses; treatment of the medically compromised patient; etc.

4.3…/

4.3 **Oral Medicine and Periodontology**

Topics include the clinical appearance of oral mucosal diseases; surgical and non-surgical treatment of routine and periodontally-involved cases; use of surgical techniques for crown lengthening and hemi-section; the relationship between periodontal health and prosthodontic treatment; peri-implant tissue management; etc.

4.4 **Oral Microbiology**

This course includes: bacteriology; virology; bacterial pathogenic mechanisms; microbial techniques; sterilisation and disinfection; immunology, etc.

**5.0 Attendance Courses**

These are formal course which must be attended but which are not assessed.

5.1 **Research Methodology**

Introduction to research methods; Elementary statistics; The computer in research; Laboratory animal science; Experimental design; Research protocols; Critical appraisal of research papers; Research reports, dissertations and theses for different levels of degree; Grant writing; Presentation of papers at congresses; Ethics and honesty in research.

5.2 **Radiographic Diagnosis**

The normal anatomy of the maxillofacial region including the anatomy of the temporomandibular joint as seen on computerised tomography and magnetic resonance imaging.

The concepts of the panoramic image, cephalometric and implant radiography, digital imaging and cone-beam volumetric tomography.

The application of diagnostic imaging in the interpretation of lesions of the maxillofacial region.

Recognition of the more common abnormalities affecting the maxillofacial region as well as the signs and symptoms of important malignant lesions to inform an acceptable differential diagnosis.

5.3 **Speech Therapy**

This course covers the basic aspects of speech, the articulators of speech as they apply to prostheses and in particular the effect on speech of defects in the cranio-facial region and the rehabilitation of speech along with the rehabilitation of the area with prostheses.

5.4 **Maxillo-Facial and Oral Surgery**

This course is provided to give the candidate in Prosthodontics an understanding of the surgical procedures involved in such aspects as orthognathic surgery, trauma, oncology, implantology, augmentation, etc.

5.5 **Orthodontics**

The interdisciplinary aspects of appropriate treatment planning and management with respect to the need for orthodontic repositioning as adjunctive therapy together with Prosthodontic rehabilitation is taken together with candidates in Orthodontics to gain an understanding of the procedures that will assist both disciplines in effecting an appropriate outcome for the patient.

**6.0 Adjunct / Integrated Topics**

These topics are to be integrated into the major courses where and when appropriate: they are listed here for completeness, and the study guides will provide more detailed information.

- Behavioural Science
- Dental Materials
- Educational methodologies
- Public health

7.0…/

## 7.0 Ancillary Courses

Although not compulsory, candidates are strongly encouraged to undertake additional courses which will contribute to their overall professional development, and enable them to acquire additional skills and experiences. The recommended courses, which the candidates are expected to arrange for themselves and in their own time, are as follows:

### 7.1 Life skills

A life-skills training course such as that run by the Life Line organisation is recommended to provide an opportunity for candidates to be more aware of the infallibility of themselves and others so that they may better understand, sympathise, empathise and communicate with their patients, as in Prosthodontics in particular it is acknowledged that the cranio-facial region plays a large psychogenic role in signs, symptoms, treatment and rehabilitation.

### 7.2 Drawing and sculpture

A life drawing and sculpture course is recommended to assist candidates to develop their psychomotor skills and in particular to learn to observe and see through greater use of the right side of the brain, as it is known that this will assist them in developing a more refined recognition of their aesthetic observations and their patients' aesthetic needs and demands.

# A P P E N D I X C:

## A SCHEMA FOR CASE PRESENTATIONS

This schema can be used as a guide for both written and oral case presentations

**1.0 Patient Details and Case Classification**

1.1 Case classification
Fixed, removable, implant etc…

**2.0 Presenting Complaint and History**

2.1 Presenting Complaint
Main complaints, History of complaints, Patient's expectations

2.2 Medical History

2.3 Dental History

2.4 Social History
Adaptability, Patient compliance / Availability / Socio-economic factors

2.5 Habits

**3.0 Clinical Examination**

3.1 **Extra-oral**

3.1.1 General
Head and facial appearance, Lips, Cheeks, Muscles, etc…

3.1.2 Facial Analysis

3.1.3 Dentolabial Analysis
Resting lip-line, Smile-line, Laugh-line, Dental midline
Aesthetics of anterior teeth: Crown height, Shape, Shade, Size, Alignment and position

3.1.4 Phonetic Analysis

3.1.5 TMJ Analysis
Pain, Sounds, Mandibular movements, Maximum opening

3.2 **Intra-Oral**

3.2.1 General
Oral cleanliness: Plaque, calculus, food impaction, stains

3.2.2 Soft tissue
Lips, Labial vestibule, Cheeks etc

3.2.2.1 Periodontium
Gingiva: Biotype, Colour etc
Periodontal chart

3.2.2.2 Partially- or Completely Edentulous Ridges
Cawood and Howell, Kennedy Classification.

3.2.3 Hard tissue

3.2.3.1 General
Description E.g. Heavily restored / carious / crowding etc

3.2.3.2 Tooth Surface Loss
Attrition, Erosion, Abrasion

3.2.4 Occlusal analysis
Shapes of arches
Tooth relationships: incisors, canines, molars
Dental classification
Compensating curves
Occlusal Interferences
Guidance: Lateral, Protrusive
Inter occlusal distance: Current, Planned

3.3 **Existing denture(s)**

**4.0 Special investigations**

4.1 Radiographs
- 4.1.1 Pan
- 4.1.2 Lateral Ceph
- 4.1.3 Periapicals
- 4.1.4 CBCT / CT
  If prior to implant diagnostics

4.2 Diagnostic Casts
Diagnostic wax up etc

4.3 Implant diagnostics
- 4.3.1 Diagnostic dentures
- 4.3.2 CBCT
- 4.3.3 Lateral Ceph

4.4 Saliva

**5.0 Diagnosis**

5.1 Evaluation per tooth

5.2 Diagnosis and Risk assessment
- 5.2.1 Dental
- 5.2.2 Occlusal
- 5.2.3 Periodontal
- 5.2.4 TMJ
- 5.2.5 Aesthetic

5.3 Problem List and Summary of Concerns

**6.0 Treatment**

6.1 Treatment Objectives

6.2 Options
- 6.2.1 Maxilla
- 6.2.2 Mandible

6.3 Treatment plan

6.4 Plan of treatment

**7.0 Comments and Reflections**

**8.0 Acknowledgments**
Surgeons and labs

**9.0 References**
For literature quoted

# A P P E N D I X D:

## 1.0 MARKING GUIDE FOR UNSEEN PATIENT PRESENTATION

This is a guide for examiners when candidates present their proposed treatment plans for the unseen patient.

| MARK | DESCRIPTION |
|---|---|
| <40% | The candidate:<br>• Fails to recognise most of the important aspects of the history and/or physical examination, as would be expected of a competent specialist<br>And/Or<br>• Recommends a treatment plan that is completely inappropriate |
| 40 – 45% | The candidate:<br>• Failed to recognise some important aspects of the history and/or physical examination, as would be expected of a competent specialist<br>And/Or<br>• Was unable to make an appropriate differential diagnosis, and a rational plan of treatment options. |
| 50 – 65% | The candidate:<br>• Successfully recognised most of the relevant aspects, as would be expected of a competent specialist. Examiners should be satisfied that no important aspects of the case have been missed<br>And<br>• Made an appropriate differential diagnosis, and a rational plan of treatment options. |
| 70 – 100% | The candidate:<br>• Successfully recognised all the relevant aspects of the case, as would be expected of a competent specialist<br>And<br>• Made an appropriate differential diagnosis, and a rational plan of treatment options.<br>And<br>• Demonstrated clinical maturity, insight and a breadth of experience and knowledge |

# A P P E N D I X E

**Standards Setting for the written papers in Part II of the Examination**
(Adapted from Ebel (1972), Nedelsky (1954) and Livingston and Zieky (1982))

1. Estimate the level of difficulty of each question by categorising into (a) whether it is considered Basic, Intermediate, or Difficult and (b) whether it is knowledge / skills the candidate Must Have (ie is a requirement) or Should Have (i.e. is desirable, for the level of a potential Distinction candidate).
2. Decide on the distribution of questions that should fall into each category using the grid derived from Step 1 (see below).
3. Judge the percentage of questions of each category that you would expect a borderline candidate, and a distinction candidate to get right. This implies many questions: an alternative might be to determine the percentage mark for each question.
4. Determine the score for each examiner in step 3 by multiplying the percentage of expected answers in each category by the number of questions in that category, or by taking an average percentage across all questions.
5. Then add all the scores per examiner and calculate the median (can also use a trimmed mean if there are extreme outliers) of all scores. If using percentages, the mean of all means could be used. This should help to categorise the candidate into Fail, Pass, or Pass with Distinction.

The grid derived from Step 1 is as follows:

| | **BASIC** | **INTERMEDIATE** | **DIFFICULT** |
|---|---|---|---|
| **MUST KNOW** | 10% | 40% | 20% |
| **SHOULD KNOW** | | 20% | 10% |

The figures represent the percentages of each category which could contribute to the total number of questions in the assessment, not the number of questions. This distribution of questions will be agreed on before the setting and categorisation of questions.

From a standards-setting perspective, the greater the number of questions, the wider the area of knowledge that can be assessed, and the more feasible the standard setting calculations. However, with too many questions, the depth of answers required may be more difficult as less time can be devoted to each question.

As the single exit exam is of two papers of 3-hours duration, there will be insufficient numbers of questions to carry out this exercise for each paper, and so the two papers will be taken together as one.

**JOHANNESBURG**
**February 2019**