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R E G U L A T I O N S FOR ADMISSION TO THE FELLOWSHIP OF THE COLLEGE OF PLASTIC SURGEONS OF SOUTH AFRICA

FC Plast Surg(SA)

The examination comprises Primary, Intermediate and Final: The Final must be passed within six years of passing the Intermediate.

- | | | |
|---------------------|-----|--|
| PRIMARY | - | Basic Science |
| INTERMEDIATE | i) | The principles of surgery in general |
| | ii) | The principles of the surgical speciality disciplines |
| FINAL | - | The theory and practise of plastic and reconstructive surgery, including operative surgery and the applied basic sciences namely anatomy, physiology and pathology |

PRIMARY (Adopted from the College of Surgeons (SA))

1.0 ADMISSION TO THE PRIMARY EXAMINATION

- 1.1 A candidate for the Primary examination must hold a post-internship qualification to practise medicine which has been registered or is registable with the Health Professions Council of South Africa
- 1.2 The General Surgical Primary examination is used for candidates wishing to proceed to other surgical specialities. The rules of the other surgical speciality vary and it is incumbent on prospective candidates to check the appropriate college's regulations before applying for admission to the general surgical primary examination.
- 1.3 The candidate should have successfully completed the Basic Surgical Skills course prior to applying for the Primary Examination

INTERMEDIATE (Adopted from the College of Surgeons(SA))

2.0 ADMISSION TO THE INTERMEDIATE EXAMINATION

A candidate may be admitted to the Intermediate examination having

- 2.1 passed the Primary
- 2.2 completed not less than 12 months of approved training as a registered medical practitioner, in surgery. Training during community service cannot be submitted.
Of the 12 months training called for, not less than 6 months must be spent in general surgery, not less than 3 months must be spent in ICU and not less than 3 months in trauma/emergency surgery.
- 2.2 obtained the ATLS Certificate

- 2.4 NOTE:
- 2.4.1 The Primary and Intermediate examinations may be attempted concurrently with the proviso that if the Primary is failed and the Intermediate passed, no credit will be given for passing the Intermediate which will have to be retaken
- 2.4.2 The CMSA Senate, 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

3.0 SYLLABUS FOR THE PRIMARY EXAMINATION

3.1 Primary - Basic Sciences

Core knowledge of anatomy, physiology and the principles of pathology and microbiology. This knowledge of the basic sciences is common to all surgical disciplines

[SEE APPENDIX A FOR GUIDELINES]

4.0 SYLLABUS FOR THE INTERMEDIATE EXAMINATION

4.1 Paper I - The principles of surgery in general

The principles of surgical care which are common to all surgical disciplines

[SEE APPENDIX B FOR GUIDELINES]

4.2 Paper II - The principles of surgical speciality disciplines

The principles of orthopaedic, neurosurgical, urological, plastic, general and cardiothoracic surgical care as required of all surgical disciplines

NB: General Surgery is regarded as one of the surgical specialities

[SEE APPENDIX C FOR GUIDELINES]

5.0 CONDUCT OF THE PRIMARY AND INTERMEDIATE EXAMINATIONS

5.1 Primary

two 3-hour papers of MCQs and/or short written questions on basic sciences

5.2 INTERMEDIATE (Adapted from College of Surgeons(SA))

The examination comprises:

Two 3-hour papers consisting of MCQ questions on the principles of surgery in general and of surgical speciality disciplines respectively. The multiple choice questions may include, choose the best option and extended matching questions

5.3 Marking Regulations for the Intermediate examination:

In order to pass the intermediate examination a candidate must achieve an average of 50% ¹for each of the two papers. Rounding up of the marks will not be performed. An acceptable internationally referenced standard setting process will be in place, **Effective from the FS 2018**

6.0 SYLLABUS FOR THE FINAL EXAMINATION

The theory and practise of plastic and reconstructive surgery, including operative surgery and the applied basic sciences, viz anatomy, physiology and pathology

¹ New pass criteria effective FS 2018

7.0 CONDUCT OF THE FINAL EXAMINATION²

The examination comprises:

- 7.1 Paper 1: 12 short questions
Paper 2: 12 short questions
- 7.2 an OSCE examination with a minimum of 16 stations

8.0 CONDUCT OF THE FC PLAST SURG(SA) FINAL EXAMINATION

- 8.1 The College of Plastic Surgeons uses EBEL/ANGOFF standard setting to **determine the passmark** for the written and clinical parts of the examination process

FINAL**9.0 ADMISSION TO THE FINAL EXAMINATION**

(to be read in conjunction with the Instructions)

A candidate may be admitted to the Final examination having

- 9.1 passed the Primary and the Intermediate examinations or the completed Fellowship of one of the Colleges with which there is an agreement of reciprocity
- 9.2 produced evidence of having
 - 9.2.1 been qualified to practise for a period of not less than four years (year of internship NOT to form part of this period)
 - 9.2.2 completed a period of not less than 36 months training prior to the examination date in a recognised plastic and reconstructive surgery training post certified by the academic head of the department of plastic and reconstructive surgery. A maximum of 6 months of the training called for under 2.2 may form part of these 36 months provided this period is spent in a recognised plastic and reconstructive training post
 - 9.2.3 Submitted a Portfolio (applicable to Registrars entering into their training on or after 1 January 2010)

10.0 ADMISSION AS A FELLOW

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

10.2 **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)

10.3 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

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

10.5 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.

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

APPENDIX A**1.0 AIMS, OBJECTIVES AND SYLLABUS FOR THE PRIMARY EXAMINATION IN GENERAL SURGERY**

1.1 The aim of the examination is to ensure that successful candidates are competent to embark on a career in General Surgery or one of its subspecialties. The examination will help refresh existing knowledge and impart new knowledge and competencies to ensure better care of surgical principles in a holistic manner. The competencies required are in the cognitive, psychomotor and affective (interpersonal/attitudinal) domains

1.2 Competence is defined as knowledge, skills and attitudes in:

- medical expertise
- technical expertise
- judgement – clinical decision making
- communication
- collaboration and teamwork
- management and leadership
- health advocacy
- scholarship and teaching
- professionalism.

1.3 Areas of competence that will be assessed in the FCS(SA) Primary examination will include:

- Clinically relevant anatomy and applied embryology
- Appreciation of three dimensional and cross sectional relevant anatomy
- Clinically relevant human physiology
- Pathophysiology in surgical patients
- General pathology principles and mechanisms of disease
- The genetic basis of disease
- Oncological principles in surgery
- Immunology
- Principles of microbiology relevant to general surgical practice
- Asepsis and antisepsis
- Pharmacological principles relevant to surgery
- Pharmacology of drugs commonly used in surgery
- Blood constituents, clotting mechanisms and blood product transfusion principles
- Fluid requirements and fluid management in the surgical patient
- Acid–base problems in the surgical patient
- Applied medical statistics
- Critical appraisal of the literature
- Evidence based literature
- Searching the literature
- Informed consent
- HPCSA regulations pertaining to surgical practice
- Basic clinical skills
- Basic procedural skills
- Counseling of patients and relatives
- Safety in the operating room
- Principles of audit
- Principles of patient documentation
- Principles of continuity of care
- The content of the Basic Surgical Skills course manual
- Learning in medicine is a continual process. Although general and specific objectives have been set, any aspect of medicine that is deemed to be surgically relevant may be included in the assessment

- As a guide.../

- As a guide, the Specialty of Surgery (General Surgery) covers the following areas:
 - Alimentary tract
 - The abdomen and its contents
 - Breast, skin and soft tissue
 - Endocrine system
 - Head and neck surgery
 - Vascular surgery
 - Paediatric surgery
 - Trauma surgery/burns
 - Surgical critical care
 - Surgical oncology

2.0 SPECIFIC/LEARNING OBJECTIVES

2.1 Clinically relevant anatomy and applied embryology:

- 2.1.1 Detailed knowledge of anatomy is required. Clinically relevant anatomy should be concentrated on. The anatomy of the whole body should be known in some detail. It is expected however that the candidate should concentrate on the anatomy, surface anatomy, applied anatomy and embryology of :
- Those structures commonly affected by disease encountered by the general surgeon
 - Those anatomical structures and their anatomical relationships which are important in general surgical operations
- 2.1.2 Anatomical variations are common and often pose challenges to the practising surgeons. The anatomical variations that impact on presentation of disease and /or surgical exposure should be known in detail, as should the embryological basis of the variation
- 2.1.3 The embryological origin of organs should be known. Emphasis will be placed on common anatomical variations/abnormalities that have an embryological origin
- 2.1.4 The following areas of applied gross anatomy should be concentrated on:
- Brain and skull with emphasis on areas affected by trauma and space occupying lesions
 - The cranial nerves
 - The face
 - Bony structures of the sinuses, orbit, jaw
 - The tongue and pharynx
 - Salivary glands
 - The neck
 - The chest
 - The mediastinum
 - The thoracic inlet and outlet, the brachial plexus
 - The axilla
 - The muscles of the neck and back
 - The peripheral vascular system
 - The lymphatic system
 - The heart
 - The diaphragm
 - The abdominal wall
 - The abdominal contents
 - The retroperitoneum
 - The pelvis (its contents and foramina, the pelvic floor)
 - The pelvic bones
 - The anus and continence mechanisms
 - The peripheral nervous system
 - The autonomic nervous system
 - The spine

- The spinal cord and its Neuroanatomy.../

- The spinal cord and its neuroanatomy
- The cubital fossa
- The popliteal fossa
- The gluteal area
- The perineum
- Female genitalia (internal and external)
- Male genitalia
- The extremities. Emphasis to be placed on vital structures (nerves, blood vessels), major muscle groups, compartments, vital structures in the joints, relationship of vital structures to bones
- The hand, with emphasis on vital structures, function and areas prone to infection

2.2 **Appreciation of three dimensional and cross sectional relevant anatomy:**

2.2.1 Current imaging with CT and MRI is cross sectional, but more and more axial and saggital scanning is being performed. In addition, three dimensional reconstruction is common. The candidate would be expected to be able to identify normal anatomical structures in such images

2.3 **Clinically relevant human physiology:**

2.3.1 Candidates should have detailed knowledge of:

- Homeostasis, thermodynamics, positive and negative feedback
- Fluid and electrolyte and acid-base physiology and pathophysiology
- Body water compartments
- Composition, osmotic activity and oncotic pressure of body fluids
- Water and electrolyte exchange
- Mechanisms of osmoregulation and volume regulation
- Buffer systems and mechanisms of acid-base haemostasis
- The haemopoietic system
- Lung function and respiratory exchange and oxygen transport. Control of respiration and breathing. Ventilatory response to exercise. Measuring lung function. Ventilation perfusion ratios, control of pulmonary circulation
- **Oxygen transport:**
- **Renal function:**
control systems with respect to microanatomy, autoregulation, regulation of GFR, renal tubular function(in health and disease), the effect of diuretics, the effect of obstruction at various points, bladder function and control (in health and disease)
- Adrenal function
- Function of the GIT in digestion, motility and transit, absorption
- The secretions of the GIT
- Hepatic function
- **Nutrition:**
The interrelationship between fat, carbohydrate and protein metabolism and changes with under and over nutrition. The role of trace elements and vitamins in nutrition. The nutritional impact of surgery and injury
- Cardiac function, electrophysiology and circulation
- Physiology of the peripheral vascular system and microvasculature
- Physiology of the splanchnic, hepatic circulation
- Placental and fetal circulation
- Control of blood pressure
- The endothelium
- The extracellular space and lymph systems
- The cardiovascular response to exercise and stress
- The role of Nitric Oxide

- **Neurophysiology:**
Cell membrane excitability, intercellular signaling, somatic and autonomic nervous systems, cerebral function, the functional role of the basal ganglia, limbic system, hypothalamus brainstem and reticular activating system, reflex controls, spinal neurophysiology, the cortex (and its role in speech, sensory perception and motor control), the cerebellum (and its role in fine motor coordination), the cranial nerves
- The CSF and blood-brain barrier
- Endocrine function (pituitary, thyroid, parathyroid, adrenal medulla and cortex, pancreas, kidney, sex hormones)
- The regulation of body function in response to exercise, trauma, starvation, sepsis and stress of surgery
- Paracrine and autocrine function
- The different physiology of the neonate, child, the pregnant woman and the elderly must be understood

2.4 Pathophysiology in Surgical Patients

2.4.1 It is expected that the candidate will have a clear understanding of normal human physiology and recognise how this may be altered by pathological processes, surgery or anaesthesia. Correlation between physiological changes and physical signs or symptoms elicited in patients should be clearly understood. For example, there should be a clear understanding of the physiological changes that:

- ensue in a patient following prolonged vomiting or diarrhoea,
- occur in renal function after surgery
- prevail in a patient with a perforated duodenal ulcer
- occur during and after major surgery
- occur with deep obstructive jaundice
- affect fluid balance in the surgical patient

2.4.2 The pathophysiological effects of insult to the neonate, child, the pregnant woman and the aged must be understood

2.4.3 Interpretation of laboratory results in a clinical scenario eg

- Fluid, electrolyte and acid base disturbances and their identification
- Acid base abnormalities
- Haemostasis

2.5 General Pathology Principles and Mechanisms of Disease

2.5.1 Candidates should demonstrate an understanding of the general pathological mechanisms (degenerative, reactive and neoplastic) underlying common disease. This will include knowledge of aetiology, pathogenesis, epidemiology, investigation and natural history. Areas to be concentrated on are:

- General pathological phenomena including cell injury, adaptation and death, inflammation, apoptosis, cell death, degenerations including atherosclerosis, pigmentation and calculus formation, alterations of growth, differentiation and function of cells and of age
- The effects of aging on the body
- Tissue response to injury including the adaptive reactions of the body to injury. This includes an understanding of important morphological manifestations, pathophysiology of important disease states (eg major organ failure either single or combined, shock, sepsis, disseminated intravascular coagulation), biochemical mechanisms and manifestations where these factors are important in the understanding of pathogenesis, natural history
- The processes of wound healing and tissue inflammation (acute and chronic)
- The principles of cellular events and resulting in local and systemic inflammatory responses. This includes knowledge of the common cytokines and other mediators of inflammation

- Common and important.../

- Common and important issues in systemic pathology are examinable in so far as:
 - (i) a given lesion exemplifies a basic pathological process, eg anaphylaxis as an example of hypersensitivity reactions, myocardial infarction in atherosclerosis, colorectal carcinoma as an example of neoplasia, or
 - (ii) disorders of a given system are likely to be encountered in surgical practice, eg post-operative pneumonia
- Knowledge of laboratory medicine

2.6 **The Genetic Basis of Disease (Genetics and Molecular Biology)**

- 2.6.1 Structure of DNA and RNA, the cell cycle, the generation of genetic abnormalities
- 2.6.2 Mendelian genetics
- 2.6.3 Cytogenetics including basics of laboratory techniques for detection of cytogenetic abnormalities
- 2.6.4 Specific conditions are examinable in so far as they illustrate important principles or are common or important disorders

2.7 **Oncological Principles in Surgery**

- 2.7.1 An understanding of Cancer biology is essential. The following specific aspects pertaining to oncology should be known in detail:
 - Cells and tissues of origin
 - Reproductive, growth (proliferative) patterns and host interaction
 - Mechanisms of invasion and metastasis
 - Molecular biological, genetic and inherited characteristics
 - Geographic racial and cultural (population) factors
 - Mechanisms and types of chemical, physical and microbial carcinogenesis
 - Distinctive pathological (macroscopic, histological and immunochemical) features which aid diagnosis
 - The application of the above to common cancers in children and adults
 - Principles of oncological surgery
 - Basic mechanisms of action of current common chemotherapeutic agents

2.8 **Immunology:**

- 2.8.1 Basic Immunology including:
 - non-specific defence mechanisms, the complement system, the major histocompatibility complex
 - the cells of the immune system, their functions, their interactions, cell subsets, cell surface markers and receptors structure, function, genetics of secretory products of cells involved in the immune response including immunoglobulins, interleukins, various other factors activation and control of the normal immune response
 - Immunity infection including bacteria, viruses, fungi and protozoa
 - Abnormal Immunological Responses including hypersensitivity, autoimmune disorders and immunodeficiency disorders
 - Diagnostic Immunology including the basic principles (not detailed) of commonly used immunological tests, their applications and their limitations
 - Immunology pertaining to blood product transfusion

2.9 **Transplantation:**

- Define and differentiate autografts, allografts and xenografts
- Understand the role of major histocompatibility complex in clinical transplantation

2.10 Principles of Microbiology relevant to General Surgical Practice

An understanding and knowledge of infectious agents (viruses, bacteria, fungi, protozoa and sub-viral particles eg prions) in surgical disease processes and of the developing microbial resistance to current antimicrobials is essential

- Pathogenesis of infection
- Host defence mechanisms and microbial virulence:
 - The normal microbial flora of the body and its role in health and disease
 - Surgically relevant bacterial, viral, fungal and parasitic infections;
 - infection following surgery, eg wound infection, septicaemia
 - infections with surgical implications, eg peritonitis, anaerobic soft tissue infections, AIDS
 - The principles of antimicrobial agents and their scientific use in the therapy and prevention (prophylaxis) of infection
 - Sterilisation and disinfection
 - Laboratory medicine aspects of infectious diseases, eg principles behind blood culture techniques, interpretation of gram stains, antimicrobial susceptibility techniques

2.11 Principles of Pharmacology and Therapeutics in General Surgery

- Pharmacological principles relevant to surgery and Pharmacology of drugs commonly used in surgery
- The following principles are to be covered in detail:
- Pharmacodynamics and pharmacokinetics of major drug groups
- The pharmacodynamics includes the mechanism of action of a drug, particularly where it may be important in understanding its use and/or its side-effects, whereas the pharmacokinetics include factors such as bioavailability (particularly to emphasise difference in routes of administration), plasma protein binding, clearance (metabolism if relevant) etc.
The clinical application of pharmacodynamics and pharmacokinetics in route of administration, dosage and dosing schedules, the effect of disease states on drugs, the effect of the drug on the patient, and potential clinically relevant drug interactions
- The changes in the neonate, child and elderly that effect pharmacodynamics and pharmacokinetics
- The above principles pertaining to the following drug groups should be emphasised:
 - Pain killers
 - Diuretics
 - Inotropes, vasoconstrictors, vasodilators, anti arrhythmics
 - Immune modulators including steroids and anti-inflammatories
 - Antimicrobials
 - Drugs affecting the GIT eg those affecting gastric acid secretion, gut motility, stool transit time
 - Drugs affecting haemostasis eg Heparin, Warfarin, Fractionated Heparin, Thrombolytics
 - Anaesthetic drugs (Inhalational, oral, and intravenous)
 - Local anaesthetics
 - Drugs affecting glucose metabolism eg insulin, oral hypoglycaemics
 - Cytotoxics, Anti-oestrogens eg Tamoxifen
 - Thyroxin and anti-thyroid drugs

2.12 Haematology and Transfusion

- The following aspects should be known in detail:
 - The origin and differentiation of haematopoietic cells
 - Anaemias of acute and chronic blood loss. Basic investigations to differentiate various causes of anaemia eg types and mechanisms of haemolysis, anaemias caused by substrate deficiency
 - Mechanisms of haemostasis. Tests of haemostasis and their clinical application
 - Abnormal haemostasis
 - Bleeding disorders, congenital and acquired
 - Disseminated intravascular haemostasis
 - Origin, differentiation and proliferations of white cells particularly lymphomas
 - Blood products, components and substitutes

2.13 Asepsis and Antisepsis

- Blood constituents, clotting mechanisms and blood product transfusion principles
- Fluid requirements and fluid management in the surgical patient

2.14 Critical Appraisal of the Literature, Evidence Based Medicine and Searching the Literature

- With the explosion of available medical literature, the candidate should understand the key concepts of Evidence Based Medicine (EBM), levels of evidence and how to effectively and efficiently search the literature

2.15 Legal and Ethical Issues

- Candidates should know the ethical and legal principles relating to:
 - Informed consent
 - Confidentiality and access to health records
 - Filling out a death certificate
 - Medicolegal post mortems
 - Obtaining permission for autopsy
 - Withholding resuscitative measures
 - Organ donation
 - Brain death
- HPCSA regulations pertaining to surgical practice including issues of professional misconduct

2.16 Applied Medical Statistics, Biostatistics, Epidemiology

- The candidate should:
 - Understand the principles of biostatistics and research design and commonly used statistical tests and terminology as necessary to critically appraise the clinical and experimental surgical literature
 - Understand the principles of biostatistics and epidemiology applicable to the use of diagnostic tests, screening and disease prevention programmes, patterns of disease (eg trauma, cancer), risk assessment, scoring systems (eg physiologic and anatomic scoring of trauma, neurologic function etc), prediction of outcome etc
 - Identify the meaning and appropriate usage of commonly used terms, including sensitivity, specificity, positive predictive value, negative predictive value, false positive, false negative, confidence limits, standard deviation, retrospective, prospective, intention to treat, power, randomised trial, control, blind, double blind, relative risk reduction, number needed to treat, meta analysis, systematic review
 - Identify types 1 and 2 statistical errors and the factors influencing them
 - Identify the requirements for the appropriate usage of common statistical comparison, including t test, chi-square, ANOVA, correlation, regression, non parametric testing”

2.17 The Basic Surgical Skills Course

- It is expected that all candidates have successfully completed the Basic Surgical Skills course that is run under the Aegis of the Colleges of Medicine of South Africa under license from the Royal College of Surgeons of England
- The following are examinable:
 - Asepsis and antisepsis
 - Safety in theatre
 - The principles of anastomosis
 - Suture materials and needles
 - The principles of debridement
 - Diathermy principles and safety
 - Basic principles of laparoscopy

2.18 Suggested texts for new FCS(SA) Primary:

- Rafferty AT, Delbridge MS. Basic Science for the MRCS. Churchill Livingstone, Elsevier Science, 2006. ISBN-13 978-0-443-10109-0
- Rafferty AT. Applied Basic Science for Basic Surgical Training. Churchill Livingstone, 2000. ISBN 0 443 06143 2
- Winscow TDV, Campbell MJ. Statistics at Square One 10th Edition. BMJ Books, 2002. ISBN 10 : 0 72791552 5
- **Basic Surgical Skills Manual; Third edition**
 - The above texts are highly recommended and cover almost the entire syllabus of the FCS Primary. It is expected, however, that the following texts be used as references for a deeper understanding of the basic sciences
- **Anatomy:**
 - Snell, Richard S. Clinical Anatomy . 7th Edition. Lippincott Williams and Wilkins, Philadelphia, 2004
 - McMinn R.M.H., Last's Anatomy, Regional and Applied, 9th Ed., 1998 (Reprinted 2003) Churchill Livingstone
 - Abrahams PH, Marks SC, Hutchings RT. Mc Minns Color Atlas of Human Anatomy. CV Mosby 2003 ISBN 0723432120
- **Physiology:**
 - Ganong W.F Review of Medical Physiology, 21th Ed., 2005, Lange Mc Graw-Hill or
 - Guyton, AC, Hall JE. Text Book of Medical Physiology, 11th Ed. Elsevier. 2000
- **Pathology:**
 - McPhee SJ, Lingappa, VR, Ganong WF. Pathophysiology of Disease. An introduction to clinical medicine. Fourth Edition Lange Medical Books/ McGraw-Hill 2003
 - Really Essential Medical Immunology: Ivan Roitt & Arthur Rabson
 - Cotran, Ramzi S. Joint authors/editors: Robbins, Stanley L. Kumar. V, Tucker. C Robbins pathologic basis of disease. 3rd ed. Philadelphia: London: Saunders, c1999

2.19 The examination:

This will consist of two three hour multiple choice papers. The types of questions will include multiple true false, choose the best option and extended matching questions

APPENDIX B**GUIDELINES FOR CANDIDATES ENTERING THE FCS(SA) INTERMEDIATE EXAMINATION**

The examination in the principles of surgery in general is designed to test the candidate's understanding of aspects of patient care basic to the preoperative period, viz principles of pre-operative assessment, supportive measures, and complications for both adults and children. The syllabus includes:

1.0 PRE-OPERATIVE CARE

- 1.1 Surgical nutrition; Parental and oral
- 1.2 Fluid and electrolyte therapy
- 1.3 Blood transfusions and its hazards
- 1.4 Infection and antimicrobial agents
- 1.5 Diagnostic aids - imaging and clinical chemistry

2.0 INTRA-OPERATIVE CARE

- 2.1 Aseptic and antiseptic techniques
- 2.2 Hazards and precautions in operating theatres
 - Electrical safety and hazards
 - Radiation effects and hazards
- 2.3 Wound healing and care of the wound
- 2.4 Perioperative management of diabetes mellitus
- 2.5 Perioperative management of the patient on steroid therapy

3.0 NORMAL POSTOPERATIVE CARE AND COMPLICATIONS

- 3.1 Convalescence. The metabolic response to trauma
- 3.2 Hypovolaemic shock
- 3.3 Cardiac arrest
- 3.4 Acid-base metabolism
- 3.5 Gram negative - bacterial endotoxic shock
- 3.6 Respiratory support and mechanical ventilation
- 3.7 Pulmonary aspiration
- 3.8 Adult respiratory distress syndrome
- 3.9 Deep vein thrombosis and pulmonary embolism
- 3.10 Fat embolism
- 3.11 Haemostatic disorders
- 3.12 Postoperative acute renal failure
- 3.13 Postoperative jaundice
- 3.14 The recognition of cardiac arrhythmias and cardiac failure and its management
- 3.15 Multiple organ failure
- 3.16 Postoperative care of infants and children

Suggested reading for the Intermediate: SEE APPENDIX D

APPENDIX C

GUIDELINES FOR CANDIDATES ENTERING THE FCS(SA) INTERMEDIATE EXAMINATION

The examination in the principles of the surgical speciality disciplines is designed to test the candidate's understanding of the principles relevant to the basic skill fundamental to all surgery viz those clinical situations in the surgical specialities which need urgent recognition and understanding of the basic principles of management

This will include trauma, infections and other emergencies. The syllabus includes:

1.0 NEUROSURGERY

- Head injuries
- Coma
- Raised intracranial pressure
- Spinal cord compression
- Infection of the central nervous system

2.0 ENT MAXILLOFACIAL SURGERY AND OCULAR EMERGENCIES

- Foreign bodies in the ear, nose and throat
- Infections of the ear, mouth and throat
- Maxillofacial injuries
- Tracheostomy
- Foreign bodies and penetrating injuries of the eye

3.0 PLASTIC SURGERY

- Principles of treatment of wounds including:
 - Techniques of excision and debridement
 - Closure of wounds and antibiotics in wound management
- Bites
- Tetanus and gas gangrene prophylaxis
- Burns, including fluid management, nutrition, skin grafting, and rehabilitation
- The principles of wound cover free grafting and flaps

4.0 ORTHOPAEDIC SURGERY

- The principles of diagnosis and management of fractures and major joint injuries
- Hand injuries and infections
- Spinal injuries
- Osteomyelitis
- Acute septic arthritis
- Bone tumours

5.0 CARDIOTHORACIC SURGERY

- Non-penetrating chest trauma
- Penetrating wounds of the thorax, including the heart
- Foreign bodies in the trachea, bronchus and oesophagus
- Injuries of the oesophagus
- Infections - empyema and lung abscess

6.0 UROLOGY

- Genito-urinary trauma
- Acute renal failure
- Urinary tract infections
- Scrotal emergencies
- Haematuria
- Acute retention of urine and the management of urinary catheters

7.0 GENERAL SURGERY

- 7.1 **Abdominal emergencies:** The recognition and principles of management of:
- 7.1.1 Intraperitoneal inflammation (localised or generalised)
 - 7.1.2 Obstruction of a hollow organ
 - 7.1.3 Haemorrhage (intraperitoneal or intraluminal)
 - 7.1.4 Trauma (blunt or penetrating)
 - 7.1.5 Medical conditions simulating acute abdominal emergencies, for example, diaphragmatic pleurisy, herpes zoster, porphyria, diabetes mellitus, myocardial infarction, gastro-enteritis, etc
- 7.2 **Acute vascular emergencies:** Arteries and Veins
- 7.2.1 Control of haemorrhage
 - 7.2.2 Arterial embolism
 - 7.2.3 Arterial thrombosis
 - 7.2.4 Complications of aneurysms
 - 7.2.5 Acute thrombophlebitis
 - 7.2.6 Deep vein thrombosis
 - 7.2.7 Compartmental syndrome
- 7.3 **Endocrine crises including**
- 7.3.1 Thyroid crisis
 - 7.3.2 Parathyroid crisis
 - 7.3.3 Adrenocortical crisis
 - 7.3.4 Pheochromocytoma crisis
 - 7.3.5 Hyperinsulin crisis
- 7.4 **Alimentary tract stomas**
- 7.5 **Organ transplantation and immunosuppression**
- 7.6 **Gynaecological emergencies:**
- 7.6.1 Vaginal bleeding
 - 7.6.2 Vaginal discharge
 - 7.6.3 Ectopic pregnancy
- 8.0 PAEDIATRIC SURGERY**
- 8.1 Oesophageal atresia and oesophago-tracheal fistulae
 - 8.2 Bochdaleck hernia
 - 8.3 Exomphalos
 - 8.4 Intestinal obstruction
 - 8.5 Anus imperforatum
 - 8.6 Abdominal trauma
 - 8.7 Burns in children

A P P E N D I X D**1.0 SUGGESTED READING FOR INTERMEDIATE**

In preparation for the Intermediate examination, the postgraduate student's reading should not be limited to the suggested texts. Much of the information necessary for the examination will be acquired during training on the wards, intensive care units, and trauma units.

The following texts contain the basic material and approach necessary for both the Intermediate papers:

- 1.1 Mieny CJ, Mennen U. Principles of Surgical Patient Care, Volumes 1 and 2. Pretoria; Academia (a division of Van Schaik), 1990
- 1.2 Oh TE. Intensive Care Manual. 3rd ed. Sydney: Butterworths, 1996
- 1.3 Trunkey, Lewis. Current Therapy of Trauma. 2nd ed. BC Dekker, 1999
- 1.4 Schwartz SI, Shires GT. Principles of Surgery. 7th ed. New York; London: McGraw-Hill, Health Professions Division, 1997
OR
Christopher. F. Davis-Christopher Textbook of Surgery : The Biological Basis of Modern Surgical Practice: Sabiston's Textbook of Surgery:. 16th ed. Philadelphia; London: WB Saunders, 2000

A P P E N D I X E**1.0 BASIC SCIENCES**

- 1.1 Wound healing
- 1.2 Adjuncts to wound healing
- 1.3 Wound dressings/topical agents
- 1.4 Basic techniques in plastic surgery:
 - Classification of wounds
 - Suture techniques
 - Scar revision
- 1.5 Skin grafts
- 1.6 Composite grafts
- 1.7 Dermal/dermofat grafts
- 1.8 Fat grafts
- 1.9 Healing and grafting of bone
- 1.10 Healing and grafting of cartilage
- 1.11 Healing of tendon and muscle
- 1.12 Healing of peripheral nerves
- 1.13 Surgical flaps
- 1.14 Tissue expansion
- 1.15 Tissue engineering and gene therapy
- 1.16 Alloplastic materials in plastic surgery
- 1.17 Local anaesthetics in plastic surgery
- 1.18 Neural anatomy and peripheral nerve blocks in plastic surgery
- 1.19 Radiation injury and radiotherapy
- 1.20 Antimicrobials in plastic surgery
- 1.21 Endoscopic plastic surgery
- 1.22 Immunology and transplant biology

2.0 THE INTEGUMENT

- 2.1 Inherited disorders of skin
- 2.2 Dermatological perspectives in plastic surgery
- 2.3 Benign skin lesions
- 2.4 Benign pigmented skin lesions
- 2.5 Keloids and hypertrophic scars

- 2.6 Non-melanoma skin cancers
- 2.7 Malignant melanoma
- 2.8 Prevention of skin tumours
- 2.9 Management of adult burns
- 2.10 Management of paediatric burns
- 2.11 Chemical burns
- 2.12 Electrical burns
- 2.13 Perioperative management of the paediatric patient
- 2.14 Burn reconstruction
- 2.15 Soft tissue sarcomas
- 2.16 Haemangiomas and vascular malformations
- 2.17 Vascular ectasias
- 2.18 Hidradenitis/axillary hyperhidrosis
- 2.19 Necrotising fasciitis/tetanus
- 2.20 Cancrum oris
- 2.21 Bacterial infections of the soft tissue

3.0 HEAD AND NECK

3.1 Cleft lip and palate deformity:

- Embryology
- Anatomy
- Cephalometrics
- Unilateral cleft lip deformity
- Bilateral cleft lip deformity
- Secondary cleft lip deformities
- Cleft palate deformity
- Speech/hearing and velopharyngeal incompetence
- Obstructive sleep apnoea

3.2 Orthodontics and orthognathic surgery:

- Classification and general principles
- Perioperative management
- Approaches and fixation techniques
- Osteotomies
 - maxillary
 - mandibular

3.3 Craniofacial surgery:

- General principles/functional aspects
- The craniosynostoses
- The craniofacial dysostoses
- Craniofacial dysplasias
- Craniofacial clefts
- The laterofacial microsomias
- Craniofacial tumours

3.4 Facial trauma:

- General management principles
- Radiological investigations and interpretation
- Maxillary/midfacial fractures
- Zygomatic fractures
- Orbital fractures
- Nasal fractures
- Naso-orbitoethmoid fractures
- Frontal sinus fractures
- Palatal fractures
- Mandibular fractures
- Secondary reconstruction in facial trauma
- Facial trauma in paediatric patients

4.0 HEAD AND NECK ONCOLOGY

- 4.1 Benign conditions of the lip
- 4.2 Benign intraoral conditions
- 4.3 Malignant lesions of the lip
- 4.4 Malignant lesions of the oral cavity
- 4.5 Maxillary and skull base tumours
- 4.6 Approach to cervical masses
 - Adults
 - Paediatrics
- 4.7 Tumours of the major and minor salivary glands
- 4.8 Solid and cystic lesions of the jaw
- 4.9 General principles of extirpative surgery
- 4.10 Chemotherapy in head and neck cancer
- 4.11 Radiotherapy in head and neck cancer

5.0 HEAD AND NECK CONSTRUCTION

- 5.1 General principles of head and neck reconstruction
- 5.2 Intraoral reconstruction
- 5.3 Mandibular reconstruction
- 5.4 Maxillary reconstruction
- 5.5 Tongue reconstruction
- 5.6 Palatal reconstruction
- 5.7 Tracheo-oesophageal reconstruction
- 5.8 Scalp/forehead and calvarial reconstruction
- 5.9 Nasal reconstruction
- 5.10 Lip and commissure reconstruction

- 5.11 Cheek reconstruction
- 5.12 Eyelid reconstruction
 - Congenital
 - Acquired
- 5.13 Orbital reconstruction
 - General principles
 - Congenital
 - Anophthalmic orbit
 - Post traumatic enophthalmos
 - Exophthalmos/Grave's disease
 - Orbital dystopia
 - Orbital hypertelorism/hypotelorism
- 5.14 Ear reconstruction
 - Congenital deformities
 - Acquired deformities

6.0 TREATMENT OF FACIAL PARALYSIS AND SIALORRHEA

7.0 SURGICAL MANAGEMENT OF DOWN'S SYNDROME/TURNER'S SYNDROME/NOONAN'S SYNDROME/KLIPPEL FEIL SYNDROME

8.0 AESTHETIC SURGERY

- 8.1 Aesthetic facial surgery:
 - Relevant facial anatomy
 - Aesthetic facial assessment
 - Clinical
 - Cephalometric
 - Anthropometric
 - Facial ageing
 - Inherited disorders of skin
 - Browlift/foreheadplasty
 - Blepharoplasty
 - Rhytidectomy
 - Primary
 - Secondary
 - Cervicoplasty
 - Rhinoplasty
 - Primary
 - Secondary
 - Aesthetic surgery of the ears
 - Laser resurfacing
 - Dermabrasion
 - Chemical peels
 - Aesthetic surgery of the lips
 - Facial contouring and augmentation
 - Fillers and injectables
 - Hair restoration
 - Hair removal
 - Management of skin pigmentation

- 8.2 Aesthetic breast surgery:
- Embryology and anatomy
 - Breast development and physiology
 - Breast aesthetics
 - Reduction mammoplasty
 - Augmentation mammoplasty
 - Non-surgical breast augmentation
 - Breast ptosis and mastopexy
 - Nipple areolar reduction
 - Management of inverted nipples
 - Correction of secondary cosmetic deformities
 - Gynaecomastia

- 8.3 Aesthetic surgery of the trunk and extremities:
- Embryology and anatomy of adipose tissue
 - Physiology of adipose tissue
 - Abdominoplasty
 - Gluteoplasty
 - Thighplasty
 - Brachioplasty
 - Aspirative lipoplasty
 - Pectoral augmentation
 - Gluteal augmentation
 - Phallic augmentation/reduction
 - Calf augmentation/reduction
 - Management of varicosities/Telangiectasias

9.0 RECONSTRUCTION OF THE TRUNK AND THE LOWER EXTREMITY

9.1 Embryology and anatomy of the trunk and lower extremity

9.2 Trunk reconstruction:

- Congenital
- Acquired

9.3 Lymphoedema

9.4 Pressure sores

9.5 Lower limb reconstruction:

- Congenital conditions
- Acquired conditions
- Principles of soft tissue reconstruction
- Assessment of long term outcome
- Lower limb ulceration
- The diabetic foot
- The burnt foot
- Reconstruction of the heel and sole
- Lower limb replantation

10.0 RECONSTRUCTION OF THE THORAX AND BREAST

- 10.1 Embryology and anatomy
- 10.2 Congenital thoracic deformities
- 10.3 Acquired thoracic deformities
- 10.4 Cardiomyoplasty
- 10.5 Pacemaker extrusion
- 10.6 Mediastinitis
- 10.7 Oesophageal reconstruction
- 10.8 Congenital anomalies of the breast/nipple areolar complex
- 10.9 Medical management of benign breast disease
- 10.10 High risk breast disease/breast oncology
- 10.11 Breast reconstruction
- 10.12 Nipple areolar reconstruction

11.0 GENITOURINARY RECONSTRUCTION

- 11.1 Embryology and anatomy
- 11.2 Congenital anomalies of the male urogenital system
- 11.3 Congenital anomalies of the female urogenital system
- 11.4 Penile reconstruction
- 11.5 Scrotal reconstruction
- 11.6 Penoscrotal lymphoedema
- 11.7 Vulvovaginal/perineal reconstruction
- 11.8 Gender dysphoria/transsexualism/gender reassignment

12.0 UPPER EXTREMITY

- 12.1 Embryology and anatomy
- 12.2 Hand kinesiology
- 12.3 Congenital deformities of the upper limb
- 12.4 Flexor tendon repair and reconstruction
- 12.5 Extension tendon repair and reconstruction
- 12.6 Principles of thumb reconstruction
- 12.7 The nailbed and paronychium
- 12.8 Fingertip injuries
- 12.9 Replantation of the upper extremity
- 12.10 Amputations of the upper limb

- 12.11 Peripheral nerve injuries and tendon transfers
 - Ulnar
 - Median
 - Radial
 - Combined
- 12.12 Nerve entrapment syndromes
- 12.13 Tendon entrapment syndromes
- 12.14 Repetitive strain injuries
- 12.15 Ischaemic conditions of the upper limb
- 12.16 Extravasation/envenomation and frostbite
- 12.17 Hand sepsis
- 12.18 Benign and malignant tumours
- 12.19 Fractures and dislocations of the hand and wrist
- 12.20 Degenerative conditions of the hand and wrist
- 12.21 Dupuytren's disease
- 12.22 Cutaneous coverage of the upper extremity
- 12.23 Brachial plexus injuries
- 13.0 MICROSURGERY AND FLAPS**
- 13.1 Basic principles and techniques
- 13.2 Cutaneous flaps
- 13.3 Muscle flaps
- 13.4 Combination of flaps
 - Musculocutaneous
 - Osseocutaneous
 - Osseomusculocutaneous
- 13.5 Chimeric flaps
- 13.6 Perforator flaps
- 13.7 Vascularised bone transfers
- 13.8 Vascularised abdominal visceral flaps
- 13.9 Vascularised nerve transfers
- 14.0 PRACTICAL CONCEPTS**
- 14.1 Medico-legal principles
- 14.2 Office based surgery
- 14.3 Medical aids and practice management
- 14.4 Ethics

14.5 Psychological aspects of plastic surgery

14.6 Research and statistics

15.0 SUGGESTED READINGS

15.1 Textbooks:

- McCarthy JG. (Ed) Plastic Surgery. Philadelphia: Saunders, 1990
- Grabb WC. Grabb & Smith's plastic surgery. 7th ed. Philadelphia; Lippincott Williams and Wilkins³
- Geogiade GS. Geogiade plastic, maxillofacial, and reconstruction surgery. 3rd ed. Baltimore; London: Williams and Wilkins, c1997
- Cohen M. Mastery of plastic and reconstructive surgery. Boston (Mass); London: Little, Brown and Co, c1994

15.2 Journals

- Plastic and Reconstructive Surgery
- British Journal of Plastic Surgery
- Journal of Dermatological Surgery
- European Journal of Plastic Surgery
- Scandinavian Journal of Plastic Surgery
- Journal of Aesthetic Surgery
- Selected Readings in Plastic Surgery
- Clinics in Plastic Surgery
- Journal of Hand Surgery
- Annals of Plastic Surgery