



JOHANNESBURG OFFICE
EXAMINATIONS & CREDENTIALS

CMSA

The Colleges of Medicine of South Africa NPC

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REGULATIONS

FOR ADMISSION TO THE FELLOWSHIP OF THE

COLLEGE OF EMERGENCY MEDICINE OF SOUTH AFRICA

FCEM(SA)

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

1.0 OBJECTIVES

- 1.1 The candidate who passes these examinations must fulfil the role of a specialist emergency physician working in a pre-hospital, in-hospital, and academic environment.
- 1.2 Candidates who are awarded the FCEM(SA) and, in addition, fulfil the other requirements of the Health Professions Council of South Africa may register and practise as a specialist emergency physician.
- 1.3 The following briefly indicates the range of competencies that can be expected of a specialist emergency physician. Upon graduating, the specialist emergency physician should be able to:
 - 1.3.1 Provide comprehensive, immediate, and stabilizing care in an emergency situation, independent of the location of the emergency
 - 1.3.2 Manage patients of all age groups with acute and urgent illness and injury who present with a full spectrum of episodic undifferentiated physical and behavioural symptoms and/or disorders
 - 1.3.3 Determine when to seek the help of another medical discipline
 - 1.3.4 Act as the patient's advocate, advisor, and guide within the discipline of Emergency Medicine.
 - 1.3.5 Coordinate and oversee the processes and operations in the management of an emergency centre
 - 1.3.6 Demonstrate knowledge of emergency care systems, including understanding the risks to systems in terms of disasters and major incidents, and coordinate and oversee the management of multiple patients simultaneously, including mass-casualty incidents

2.0 STRUCTURE

- 2.1 The examination in Emergency Medicine comprises a Part I and Part II examination. The Part II must be passed within six years of passing the Part I.
 - 2.1.1 Part I – Basic Sciences.
 - 2.1.2 Part II – The theory and practise of emergency medicine.

3.0 ADMISSION TO THE EXAMINATIONS

(to be read in conjunction with the Instructions)

3.1 Part I:

- 3.1.1 For admission to the Part I examination, the candidate must hold a post-internship qualification to practise medicine which is registered or registrable with the Health Professions Council of South Africa.
- 3.1.2 The Senate of the CMSA, 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 Part II:

A candidate may be admitted to the Part II examination having:

- 3.2.1 successfully completed the Part I examination within the previous 6 years.
- 3.2.2 been qualified to practice for a period of not less than four years post-internship.
- 3.2.3 completed at least 3 years of the training as set out in these Regulations (Appendix E). The candidate must have completed 36 months on the date the 1st paper is written.
- 3.2.4 submitted a CMSA-approved comprehensive CRITICAL PERFORMANCE PORTFOLIO, including Level I certification in Emergency Ultrasonography (Appendix E), a completed research assignment, and supported by their academic head. Please note that the submission of an incomplete CRITICAL PERFORMANCE PORTFOLIO will result in your examination application being declined. 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.¹
- 3.2.5 The Senate of the CMSA, 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. The Senate may refuse a candidate entry to the examination based on critical performance, professional and ethical considerations

4.0 SYLLABUS FOR THE EXAMINATIONS

4.1 Part I:

- 4.1.1 A syllabus forming a general guide to the Part I examination is attached (Appendix A).
- 4.1.2 Recommended reading for the Part I examination is attached (Appendix B).

4.2 Part II:

- 4.2.1 A syllabus forming a general guide to the Part II examination is attached (Appendix C).
- 4.2.2 Recommended reading for the Part II examination is attached (Appendix D).

5.0 CONDUCT OF THE EXAMINATIONS²

5.1 Part I:

- 5.1.1 Two online **multiple choice question papers** (3 hours each):
 - Each MCQ paper will consist of 100 questions (25 questions on each of the 4 basic sciences: Anatomy, Pathology, Physiology and Pharmacology).
 - A correct answer will score 1 (one) mark. A blank or incorrect answer will score 0 (zero) marks.
- 5.1.2 In order to pass the Part I examination, the candidate must achieve an average above the cut score as determined by the accepted standard setting process across the written examination.³ The subminimum for each paper is 40%. If a candidate scores below 40%, for any one of the papers then the candidate will not meet the required standard.

The weighting of the examination is as follows:

MCQ Paper 1	100 Marks
MCQ Paper 2	100 Marks

¹ LogBox recommendation effective for new Registrars – 1 January 2019

² Conduct of the Examinations updated June 2018

³ Effective SS2020

5.2 **Part II:**

5.2.1 **Two online written papers** (3 hours each). Single best answer MCQs covering the principles and practice of emergency medicine, including investigations, diagnosis, and treatment. Emphasis will be on clinical aspects relevant to the practise of emergency medicine.

One Paper consists of MCQs without a stimulus and one paper with a stimulus such as ECGs, radiology, labs, images, statistics and other data relevant to the practice of Emergency Medicine.

In order to be invited to the Performance examination for the Part II FCEM (SA) examination, the candidate must achieve an average above the cut score as determined by the accepted standard setting process across the written examination.³ The subminimum for each paper is 40%. If a candidate scores below 40%, for any one of the papers then the candidate will not meet the required standard to be invited to the Performance examination.

The weighting of the examination is as follows:

MCQ Paper 1 100 Marks

MCQ Paper 2 100 Marks

See, candidate information leaflet

5.2.2 **Performance examination:** This assessment comprises an online video-based Structured Oral Examination (SOE) examined by different sets of examiners. This will include stations on critical appraisal skills, cased-based assessments, Structured oral assessments, and may also include aspects of the candidate's critical performance portfolio. Basic science questions can and will be included in the Part II examination. The Performance examination will test multiple competencies including but not limited to: • Communication • Collaboration • Leadership • Health Advocacy • Professionalism • Scholarship • Knowledge integration.

5.2.3 **Successful completion of the examination.** To be invited to the Oral/Clinical components of the Part II examination, the candidate must achieve an *average above the cut score* as determined by the accepted standard setting process across the written examination and obtain a mark above the subminimum of 40% for each SBA MCQ paper.

To pass the Performance examination, candidates must pass at least 50% of the stations as well as obtain an average above the cut score as determined by the accepted standard setting process. Each station is a separate component of the examination and will be individually weighted in terms of critical priority and level of difficulty.

The weighting of the examination is as follows:

Written Component

Component 1: MCQ	100 Marks	(50%)
MCQ	100 Marks	(50%)
	=200 Marks	(100%)

The candidate must achieve *an average above the cut score* as determined by the accepted standard setting process *across the written examination to be invited to the practical component*. The subminimum for each paper is 40%. The written component does not count towards the practical marks.

Practical Components The practical weighting may change depending on the number of stations

Cased Based Assessments

Critical Appraisal

Structured Oral Examinations

TOTAL 100%

If a candidate passes the written component of the FCEM (SA) Part II examination, but fails the Performance component of the exam, they will be permitted to repeat the Performance component once only, at the next set of examinations, without having to rewrite the written component. This carry over of the written component results will only be permitted once, and only for the Performance examination directly following the failed Performance examination.

6.0 ADMISSION AS A FELLOW

6.1 Only candidates who have completed training in an HPCSA 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 objectives 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 atthisday of..... 20

Signature

Witness

(who must be a Founder, Associate Founder, Fellow, Member, Diplomat 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.

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

APPENDIX A

PROPOSED SYLLABUS FOR THE PART I EXAMINATION OF THE FCEM(SA)

The following syllabus is a basic science study guide in preparation for the Part I Examination of the FCEM(SA). It is intended only as a guide to the major topics, and any area of basic medical science applicable and appropriate to the clinical practise of emergency care can be examined.

1.0 CLINICAL ANATOMY**1.1 Tissues and structures:**

- Skin, subcutaneous tissue and deep fascia
- Ligaments, cartilage, muscles, tendons and joints
- Mucous membranes and serous membranes
- Blood vessels and lymphatics

1.2 The nervous system:

- Nerve supply of body wall and limbs, dermatomes and myotomes
- Nerve supply of head and neck
- Autonomic nervous system, sympathetic nervous system, parasympathetic nervous system and cranial autonomic ganglia

1.3 Upper limb:

- Osteology
- Pectoral girdle
- Breast and axilla
- Scapular region
- Arm, forearm and hand
- Joints
- Vessels and nerves

1.4 Lower limb:

- Osteology
- Thigh, groin and adductor compartment
- Gluteal region and hamstring compartment
- Popliteal fossa
- Leg, foot and peroneal compartment
- Joints
- Vessels and nerves

1.5 Central nervous system:

- Brain, midbrain, brainstem and cerebellum
- Spinal cord

1.6 Head and neck:

- Skull and cranial cavity
- Face and mandible
- Mouth, pharynx and larynx
- Nasal passages, sinuses and nasopharynx
- Ear and eye
- Neck
- Vessels, glands and fascia
- Cranial nerves
- Vertebral column and spinal canal

1.7 Thorax:

- Chest wall and diaphragm
- Mediastinum
- Heart and great vessels
- Lungs and airway passages

- 1.8 **Abdomen and pelvis:**
- Abdominal wall, urogenital diaphragm, peritoneum and retroperitoneal cavities
 - Gastro-intestinal tract including oesophagus, stomach, intestines, liver, spleen, pancreas, kidneys, ureters, bladder and urethra
 - Reproductive organs and related cavities
 - Joints of pelvis
 - Vessels and nerves
- 1.9 **Comparative anatomy of the paediatric patient**
- 1.10 **Comparative anatomy of the pregnant patient**
- 1.11 **Surface anatomy**
- 2.0 **PATHOLOGY**
- 2.1 **The normal cell**
- 2.2 **Cellular injury and adaptation**
- 2.3 **Tissue response to injury:**
- Acute inflammation
 - Chronic inflammation
 - Healing, repair and scar formation
 - Inflammatory response
- 2.4 **Fluid and haemodynamic derangements:**
- Oedema
 - Hyperaemia and congestion
 - Haemorrhage
 - Thrombosis and coagulation
 - Haemostasis
 - Embolism
 - Infarction
 - Shock
- 2.5 **Diseases of immunity:**
- General features of the immune system
 - Hypersensitivity reactions
 - Immunologic tolerance and causative mechanisms of auto immune disease
 - Acquired Immunodeficiency Syndrome (AIDS)
- 2.6 **Neoplasia:**
- Pathogenesis of cancer, oncogenes and anti-oncogenes, tumour-host interactions
 - Characteristics of benign and malignant neoplasms
 - Mechanisms of invasion and spread
 - Laboratory diagnosis; applicable grading and staging of cancer
- 2.7 **Infectious disease:**
- General features of microbial activity including transmission and resistance
 - Viral disease
 - Bacterial infections – infections by pyogenic cocci, common gram negative infections, infections of childhood, tetanus and tuberculosis
 - General features of other infectious diseases – chlamydia, rickettsia, mycoplasma, fungi, protozoa and helminths
 - Principles of sterilisation and disinfection
- 2.8 **Environmental pathology:**
- Air pollution
 - Chemical and drug injury
 - Physical injuries
 - Radiation injuries
 - Occupational hazards
 - Environmental threats; altitude and water hazards

- 2.9 **Diseases of ageing and the disabled**
- 2.10 **Cardiovascular system:**
- Atherosclerosis
 - Venous thrombosis
 - Congestive heart failure
 - Ischaemic heart disease
 - Cardiomyopathies
 - Cardiac electrophysiology
- 2.11 **Respiratory system:**
- Atelectasia
 - Pulmonary congestion and oedema
 - Asthma and chronic obstructive airways disease
 - Restrictive pulmonary disease
 - Barotrauma and hyperbaric oxygen
- 2.12 **Liver and biliary tract:**
- Jaundice
 - Hepatitis
 - Hepatic failure
 - Cirrhosis
 - Hepatic infections
 - Hepatic and biliary trauma
- 2.13 **Pancreas:**
- Acute pancreatitis
 - Chronic pancreatitis
 - Endocrine pancreas
 - Pancreatic trauma
- 2.14 **Renal system:**
- Acute renal failure
 - Chronic renal failure
 - Hypertensive renal disease
 - Abnormalities in acid-base balance
- 2.15 **Haematopoietic system:**
- Anaemias
 - Leucopaenia and leucocytosis
 - Blood groups and transfusions
 - Spleen
- 2.16 **Endocrine:**
- Pituitary
 - Thyroid
 - Parathyroid
 - Adrenal cortex and medulla
- 2.17 **Musculoskeletal system:**
- Osteoporosis
 - Osteoarthritis, rheumatoid arthritis and inflammatory disease
 - Fractures and trauma
- 2.18 **Calculi**

3.0 PHYSIOLOGY

3.1 Principles of cellular function:

- Body fluid compartments
- Units of solute concentrations
- Body fluids composition
- Movement across membranes
- Resting membrane potentials
- Total body sodium, potassium and osmolality
- Intercellular communication

3.2 Nerves and muscles:

- Nerves
- Muscles
- Synaptic transmission
- Principles of sensory organ stimulation

3.3 Nervous system:

- Reflexes
- Sensory pathways
- Vision
- Reticular activating system
- Control of posture and movement
- Vestibular system
- Temperature regulation

3.4 Metabolism:

- Cellular metabolism
- Carbohydrate metabolism
- Protein metabolism
- Fat metabolism

3.5 Endocrinology:

- Thyroid gland
- Pancreas
- Adrenal glands
- Parathyroid and calcium metabolism
- Pituitary gland
- Renal endocrine functions

3.6 Digestion and absorption:

- Carbohydrates
- Proteins
- Fats
- Water and electrolytes
- Vitamins and minerals

3.7 Gastrointestinal system:

- Hormones
- Mouth and oesophagus
- Stomach
- Exocrine pancreas
- Liver and biliary system
- Small bowel
- Colon, sigmoid and anus

3.8 Blood:

- Plasma composition
- Blood cells

3.9 The heart:

- The physiology of cardiac muscle, the cardiac cycle and regulation of heart pumping
- The specialised excitatory and conductive system of the heart

3.10 The circulation:

- Medical physics of pressure, flow and resistance; physical characteristics and interrelationships
- Vascular distensibility and functions of the arterial and venous systems; arterial pressure pulsations, veins and their functions and volume-pressure curves
- The microcirculation and the lymphatic system: capillary fluid change, interstitial fluid and lymph flow
- Control of blood flow; local control, autoregulation and hormonal regulation
- Nervous regulation of the circulation; central nervous system, autonomic nervous system and arterial pressure reflexes
- Cardiac output; Frank–Starling, Boyles law, Pascal’s equation, blood volume and peripheral resistance, mean systemic filling pressure, venous return curves, cardiac output curves and measurement of cardiac output
- Regional blood flow; cerebral, coronary, splanchnic, skin, renal and muscle blood flow

3.11 Cardiovascular homeostasis:

- Regulation of blood pressure
- Gravitational effects
- Exercise

3.12 Respiratory physiology:

- Structure and function; blood-gas interface, airways and air flow, blood vessels and flow, gas transport, stability of alveoli and removal of inhaled particles
- Ventilation; lung volumes, anatomic dead space, physiologic dead space and regional differences in ventilation
- Diffusion laws, diffusion and perfusion limitations, oxygen uptake along the pulmonary capillary, measurement of diffusing capacity, interpretation of diffusion capacity for CO, CO₂ transfer across the pulmonary capillary
- Blood flow and metabolism; pressures within pulmonary blood vessels, pressures around pulmonary blood vessels, pulmonary vascular resistance, measurement of pulmonary blood flow, distribution of blood flow, hypoxic vasoconstriction, water balance in the lung, metabolic and other functions of the lung
- Control of ventilation; central and peripheral controls, effectors, sensors and integrated responses
- Respiratory physiology in unusual environments; high altitude and increased pressure
- Tests of pulmonary function; ventilation, blood flow, ventilation-perfusion relationships, blood gases and pH

3.13 Renal system:

- Nephron structure
- Blood flow
- Glomerular filtration
- Tubular function
- Micturition and excretion

3.14 Acid/base balance:

- Hydrogen ion production and balance
- Buffering

4.0 PHARMACOLOGY**4.1 General pharmacology:**

- Pharmacokinetics; absorption, distribution, biotransformation and elimination kinetics
- Pharmacodynamics; mechanisms of action, receptors and their regulation, second messengers, dose response and dosing issues
- Drug evaluation

- 4.2 **Respiratory system:**
- Methylxanthines
 - Sympathomimetics
 - Disodium cromoglycolute
 - Muscarinic antagonists
 - Antitussives, mucolytics and antihistamines
 - Oxygen, heliox
 - Anaesthetic agents and gases
 - Corticosteroids
 - Other
- 4.3 **Cardiovascular system:**
- Cardiac emergency drugs; drugs used in cardiac resuscitation, inotropes, magnesium sulphate and others
 - Anti-anginal drugs; nitrates, calcium channel blockers, beta blockers and others
 - Antiarrhythmic agents; sodium channel blockers, beta blockers, action potential prolonging drugs, calcium channel blockers and others
 - Cardiac glycosides
 - Antihypertensives; beta blocking agents, angiotensin converting enzyme inhibitors, vasodilators, sympatholytics and others
 - Diuretics; loop diuretics, agents acting on the proximal tubule and others
 - Drugs used in anticoagulation; fibrinolytics, glycoprotein IIb/IIIa inhibitors, platelet inhibiting agents, coumadin derivatives, heparin derivatives (fractionated and unfractionated) and others
- 4.4 **Nervous system:**
- Neurotransmitters; mechanism of action and metabolism
 - Autonomic nervous system; sympathetic and parasympathetic
 - Local anaesthetics
 - General anaesthetics; induction agents, muscle relaxants, volatile and other anaesthetics
 - Antipsychotic agents; phenothiazines, butyrophenones and atypical agents
 - Antidepressants; tricyclic antidepressants, serotonin re-uptake inhibitors, lithium and others
 - Anticonvulsives; phenytoin, carbamazepine, valproate and others
 - Hypnotics and sedatives; benzodiazepines, barbiturates and others
 - Opiates and opiate antagonists
 - Alcohol
 - Anti-parkinsonian agents
 - Anti-migraine agents and the management of headaches
 - Recreational agents; cocaine, amphetamine and derivatives, LSD, mandrax and others
 - Other
- 4.5 **Antimicrobial agents:**
- Principles of action
 - Beta lactam agents
 - Aminoglycosides
 - Sulphonamides
 - Quinolones
 - Antimycobacterial agents
 - Antifungal
 - Antivira .../
 - Antiviral, including HIV prophylaxis
 - Disinfectants
 - Mechanism of resistance
 - Anti-protozoal, anti-parasitic and anti-helminthic
 - Macrolide agents
 - Other

- 4.6 **Autocoids:**
- Histamine and serotonin
 - Histamine antagonists
 - Eicosanoids
 - Kinins
 - Other
- 4.7 **Endocrine system:**
- Drugs used in the treatment of diabetes
 - Corticosteroids
 - Oestrogen & progesterone
 - Drugs used in the treatment of thyroid disease
 - Hypothalamic and pituitary hormone agents
 - Drugs affecting bone metabolism
 - Other
- 4.8 **Gastro-intestinal tract:**
- Anti-emetics
 - Anti-diarrhoeals
 - Laxatives
 - Peptic ulcer, helicobacter medication and irritable bowel syndrome
 - Anti-spasmodics
 - Topical rectal agents
 - Other
- 4.9 **Analgesics and anti-inflammatory agents:**
- Aspirin and non-steroidal anti-inflammatory drugs
 - Paracetamol
 - Anti-gout agents
 - Steroids
 - Other
- 4.10 **Toxicology:**
- Gastric decontaminants; emetics and adsorbents
 - Overdose
 - Adverse drug reactions
 - Withdrawal symptoms
 - Drug interactions
 - Drugs of abuse
 - Specific poisons; paracetamol, organophosphates, carbon monoxide, cyanide and others
- 4.11 **Drugs in the extremes of age and in pregnancy:**
- Drugs and the elderly
 - Drugs and children
 - Drugs and pregnancy / breast feeding
- 4.12 **Miscellaneous:**
- Biological agents; vaccines, immunoglobulins and antivenoms
 - Vitamins and tonics
 - Drugs used in the control of lipids
 - ENT agents
 - Eye preparations
 - Dermal preparations
 - Haemopoietic agents
 - Other
- 4.13 **Genito-urinary agents:**
- Agents acting on the vagina and uterus
 - Agents acting on the bladder and urinary tract

APPENDIX B**1.0 RECOMMENDED READING FOR THE PART I EXAMINATION OF THE FCEM(SA)****1.1 Anatomy:**

- *Clinically Oriented Anatomy*
Keith L Moore, Arthur F Dalley (Lippincott Williams and Wilkins)

1.2 Pathology:

- *Applied Basic Science for Basic Surgical Training*
Andrew T Raftery (Churchill Livingstone)

1.3 Physiology:

- *Review of Medical Physiology*
William F Ganong (McGraw-Hill)

1.4 Pharmacology:

- *Pharmacology for Anaesthesia and Intensive Care* Tom E Peck, Sue Hill
(Cambridge University Press)
- *South African Medicines Formulary*
Colleen J Gibbon (Health and Medical Publishing Group)

Candidates are advised to acquaint themselves with those aspects that relate to the practise of emergency medicine, and to use the most recent edition available.

APPENDIX C**1.0 PROPOSED SYLLABUS FOR THE PART II EXAMINATION OF THE FCEM(SA)**

The following syllabus is a study guide in preparation for the Part II Examination of the FCEM(SA). It is intended only as a guide to the major topics, and any aspect relevant to the basic science and clinical practise of emergency medicine can be examined.

1.1 Pre-hospital emergency care:

- Emergency medical services
- Pre-hospital medical devices
- Rural EMS systems
- Alternatives to road medical transport
- Neonatal and paediatric transport
- Disaster medical services
- Mass gatherings
- Triage and referral to appropriate facilities
- Injury prevention

1.2 Resuscitative problems and techniques:

- Basic cardiopulmonary resuscitation
- Ethics of resuscitation
- Advanced airway support
- Peripheral and central vascular access
- Invasive monitoring and pacing techniques
- Cerebral ischaemia
- Current research in resuscitative techniques
- Neonatal resuscitation and emergencies
- Paediatric cardiopulmonary resuscitation
- Acid-base problems
- Pathophysiology and interpretation of blood gases
- Fluid and electrolyte problems
- Disturbances of cardiac rhythm, conduction and repolarisation
- Pharmacology of anti-arrhythmic and vaso-active medications
- Financial, medico-legal and political aspects of resuscitation
- Termination of resuscitation and diagnosis of death
- Organ donor, ethical and forensic considerations

1.3 Acute signs and symptoms in adults:

- Chest pain
- Dyspnoea, hypoxia and hypercapnoea
- Haemorrhagic shock
- Septic shock
- Anaphylaxis and acute allergic reactions
- Cyanosis
- Syncope
- Abdominal pain
- Gastrointestinal bleeding
- Coma and altered states of consciousness
- Systemic analgesia and sedation for procedures in adults
- Pain management, care and comfort

1.4 Acute signs and symptoms in children:

- Fever
- Diarrhoea and vomiting
- Fluid and electrolyte therapy
- Upper respiratory emergencies
- Paediatric
- Paediatric analgesia and sedation

- Hypoglycaemia in children
- Altered mental status in children
- Syncope and breath-holding
- The uncontrollable child

1.5 **Emergency wound management:**

- Evaluation and management of wounds in the emergency department
- Local and regional anaesthesia for wound repair
- Wound preparation and care
- Methods for wound closure
- Technical considerations in the repair of difficult wounds
- Soft tissue injuries to the face
- Fingertip injuries
- Puncture wounds and animal bites • Post repair wound care and advice

1.6 **Cardiovascular emergencies:**

- Myocardial ischaemia and infarction
- Pre-hospital and ED fibrinolytic therapy
- Acute interventions in myocardial infarction
- Heart failure and pulmonary oedema
- Endocarditis and valvular emergencies
- Cardiomyopathies, myocarditis and pericardial disease
- Pulmonary embolism
- Hypertensive emergencies
- Thoracic and abdominal aortic aneurysms
- Mesenteric ischaemia
- Acute extremity ischaemia and thrombophlebitis
- Cardiovascular physiology of aging
- Cardiac transplantation
- Cardiac dysrhythmias

1.7 **Pulmonary emergencies:**

- Bacterial pneumonias
- Viral and mycoplasma pneumonias
- Pneumonias in immuno-compromised patients
- Aspiration pneumonia, empyema and lung abscess
- Tuberculosis
- Spontaneous and iatrogenic pneumothorax
- Haemoptysis
- Acute asthma in adults
- Chronic obstructive pulmonary disease

1.8 **Gastro-intestinal emergencies:**

- Oesophageal emergencies
- Swallowed foreign bodies
- Peptic ulcer disease
- Perforated viscus
- Acute appendicitis
- Intestinal obstruction
- Hernia in adults and children
- Ileitis and colitis
- Colonic diverticular disease
- Anorectal disorders
- Gastroenteritis and diarrhoeal diseases including food poisoning
- Cholecystitis
- Cholecystitis and biliary colic
- Acute jaundice and hepatitis
- Acute pancreatitis
- Complications of general and urologic surgical procedures
- Liver failure and transplantation

- 1.9 **Renal and genito-urinary emergencies:**
- Emergency renal problems
 - Urinary tract infections
 - Male genital problems
 - Renal transplant patients
 - Emergencies in chronic dialysis patients
 - Urologic stone disease
- 1.10 **Gynaecological and obstetrical emergencies:**
- Gynaecologic emergencies
 - Vulvovaginitis
 - Emergency medical problems in pregnancy
 - Blunt abdominal trauma during pregnancy
 - Emergency delivery and post-partum care
 - Common complications of gynaecologic procedures
- 1.11 **Paediatric emergencies:**
- Normal child development and failure to thrive
 - Common neonatal problems
 - The premature infant
 - Sudden infant death syndrome
 - Heart disease
 - Otitis and pharyngitis in children
 - Skin and soft tissue infections
 - Bacteraemia, sepsis and meningitis in children
 - Viral and bacterial pneumonias in children
 - Vulvovaginitis and paediatric urinary tract infections
 - Asthma and bronchiolitis
 - Seizures and status epilepticus in children
 - Gastroenteritis
 - Paediatric abdominal emergencies
 - The diabetic child
 - Paediatric exanthemas
 - Musculoskeletal disorders in children
 - Evaluating the handicapped or disabled child
- 1.12 **Infectious diseases and allergy:**
- Sexually transmitted diseases
 - Toxic shock syndrome and toxic shock-like syndrome
 - HIV infection and AIDS
 - Tetanus
 - Rabies Malaria
 - Common parasitic infections
 - Tick-borne diseases
 - Fever, including haemorrhagic fevers
 - SARS and avian flu syndromes
 - Travel medicine principles
 - Universal precautions

1.13 Toxicology:

- General management of poisoning
- Tricyclic antidepressants
- Current antidepressants and serotonin syndrome
- Monoamine oxidase inhibitors
- Neuroleptics
- Lithium
- Barbiturates
- Benzodiazepines
- Non-benzodiazepine sedatives and hypnotics
- Alcohols
- Narcotics
- Cocaine
- Amphetamines and amphetamine-like drugs
- Hallucinogens
- Salicylates
- Paracetamol/Acetaminophen
- Non-steroidal anti-inflammatory agents
- Xanthines
- Digitalis glycosides
- Beta blockers
- Calcium channel blocker
- Clonidine
- Phenytoin toxicity
- Iron
- Hydrocarbons
- Caustic ingestions
- Organophosphate and carbamate poisoning
- Cyanide
- Anticholinergic toxicity
- Heavy metals
- Use of Poison Information Centres

1.14 Environmental emergencies:

- Frostbite and other localised cold-related injuries
- Hypothermia
- Heat emergencies
- Insect and arachnid bites
- Reptile bites and scorpion stings
- Trauma and envenomations from marine fauna
- High altitude emergencies
- Aviation emergencies
- Dysbarism, barotraumas and diving emergencies
- Near drowning
- Thermal burns
- Chemical burns
- Electrical and lightning injuries Carbon monoxide poisoning
- Acute exposure to toxic agents
- Radiation injuries
- Mushroom poisoning
- Poisonous plants
- Terrorist related environmental agents of mass destruction
- Wilderness related emergencies

- 1.15 **Endocrine emergencies:**
- Hypoglycaemia
 - Diabetic keto-acidosis
 - Alcoholic keto-acidosis
 - Hyperosmolar non-ketotic coma
 - Lactic acidosis
 - Thyrotoxicosis and thyroid storm
 - Hypothyroidism and myxoedema coma
 - Adrenal insufficiency and Addisonian crisis
 - Pheochromocytoma and hypertensive crisis
- 1.16 **Haematologic and oncologic emergencies:**
- Evaluation of the bleeding patient
 - Acquired bleeding disorders
 - Haemophilias and von Willebrand disease
 - Hereditary haemolytic anaemias
 - Acquired haemolytic anaemias
 - Blood transfusions and component therapy
 - Emergency complications of malignancy
- 1.17 **Neurological emergencies:**
- The neuralgic examination
 - Headache and facial pain
 - Management of cerebro-vascular incidents
 - Vertigo and dizziness
 - Seizures and status epilepticus
 - Acute peripheral neurological lesions
 - Multiple sclerosis
 - Disorders of neuromuscular transmission
 - Meningitis, encephalitis and brain abscess
 - Neuroleptica malignant syndrome
- 1.18 **Eye, ear, nose, throat and oral emergencies:**
- Ocular emergencies
 - Otolaryngology emergencies
 - Nasal emergencies and sinusitis
 - Maxillo-facial fractures
 - General dental emergencies
- 1.19 **Dermatological emergencies:**
- Toxicodendron dermatitis
 - Exfoliative dermatitis
 - Erythema multiforme
 - Toxic epidermal necrolysis and the staphylococcal scalded skin syndrome
 - Cutaneous abscesses
 - Soft tissue infections
 - Petechial and purpuric emergencies
 - Psoriatic and related emergencies
 - Porphyria and related emergencies

- 1.20 **Trauma:**
- Initial approach to the trauma patient
 - General principles of paediatric trauma
 - General principles of geriatric trauma
 - Head injury
 - Spinal injuries
 - Penetrating and blunt neck trauma
 - Thoracic trauma
 - Abdominal trauma
 - Penetrating trauma to the posterior abdomen and buttock
 - Trauma to the genitourinary tract
 - Wound ballistics
 - Emergency management of vascular injury
 - Trauma of the pregnant patient
 - Physical abuse syndromes
 - Explosives injuries
 - Crush syndromes and related injuries
 - Multiple organ failure and ARDS
 - Crash dynamics and related pathophysiology
 - Entrapment and other amputation techniques
 - Specialised burns; phosphorus, napalm
 - Advanced trauma life support principles
- 1.21 **Fractures and dislocations:**
- Early management of fractures and dislocations
 - Injuries to the wrist and hand
 - Injuries to the elbow, forearm and wrist
 - Injuries to the shoulder girdle and humerus
 - Trauma to the pelvic girdle, hip and femur
 - Injuries to the knee, leg, ankle and foot
 - Compartment syndrome
 - Immobilisation and alignment techniques
- 1.22 **Muscular, ligamentous and rheumatic disorders:**
- Neck pain
 - Thoracic and lumbar pain syndromes
 - Shoulder pain
 - Overuse and degenerative syndromes
 - Muscle ruptures
 - Compartment syndromes
 - Rheumatic disorders in adults
 - Infections and non-infectious inflammatory states of the hand
 - Soft tissue problems of the foot
 - Common sport-related injuries
- 1.23 **Psychosocial disorders:**
- Emergency assessment and stabilisation of behavioural disorders
 - Psychotropic medications
 - Anorexia nervosa and bulimia nervosa
 - Hysteria and panic disorder
 - Conversion reactions
 - Crisis intervention
 - Emergency evaluation of prisoner and substance abuse patients
 - Physician well-being
 - Debriefing techniques

- 1.24 **Abuse and assault:**
- Spectrum of child abuse and neglect
 - Male and female sexual assault
 - Domestic violence
 - Abuse in the elderly and impaired/disabled
 - The violent patient
 - Post-traumatic stress management
- 1.25 **Newer imaging modalities:**
- Non-invasive vascular studies
 - Cardiac ultrasound
 - Abdominal sonography
 - Pelvic ultrasonography
 - Computed tomography
 - Principles and applications of MRI
 - Radionuclide imaging
- 1.26 **Common implantable devices:**
- Complications of central nervous system devices
 - Complications of GI and urologic devices
 - Complications of cardiovascular and intravenous devices
 - Orthopaedic devices and reconstructions
 - Complications of airway devices
- 1.27 **Medico-legal and ethical principles related to emergency care:**
- Patient autonomy and informed consent
 - Advance directives and living wills
 - The principle of futility
 - Duty to treat and the doctor-patient relationship
 - Professional and vicarious liability
 - Termination of care
 - Organ and tissue donation
 - Family involvement and support
 - Business ethics
 - Religious and cultural considerations
- 1.28 **Research Literacy including critical appraisal**

APPENDIX D

1.0 SUGGESTED READING FOR THE PART II EXAMINATION OF THE FCEM(SA)

1.1 Reference textbooks:

- Rosen P. (Ed). *Emergency Medicine: Concepts and Clinical Practice* (Mosby)
- Tintinalli JE. (Ed). *Emergency Medicine: A Comprehensive Study Guide* (McGraw-Hill)
- Cameron P et al. (Ed). *Textbook of Adult Emergency Medicine* (Churchill Livingstone)
- Greaves-Johnson. *Practical Emergency Medicine* (Arnold, London)
- Nicol A et al. (Ed). *Handbook of Trauma for Southern Africa* (Oxford University Press)
- Brown J. (Ed). *Oxford American Handbook of Emergency Medicine* (Oxford University Press)
- Roppolo LP et al. (Ed). *Emergency Medicine Handbook: Critical Concepts for Clinical Practice* (Mosby Elsevier)
- Roberts JR et al. (Ed). *Clinical Procedures in Emergency Medicine* (WB Saunders Company)
- Bernstein AD et al. (Ed). *Intensive Care Manual* (Butterworth-Heinemann)

The candidate is advised to read recent relevant texts on emergency care, and the above serve merely as a sample of available literature. The most recent edition should be referred to.

1.2 Peer-reviewed journals relating to emergency medicine:

- Emergency Medicine Clinics of North America
- Emergency Medicine Journal (UK)
- Emergency Medicine Australasia
- American Journal of Emergency Medicine
- European Journal of Emergency Medicine
- African Journal of Emergency Medicine
- Annals of Emergency Medicine
- Academic Emergency Medicine
- Resuscitation (Elsevier)

In addition, the following Journals regularly contain articles relevant to emergency care, and should be used as a resource for the most recent knowledge in the medical literature.

- Critical care Medicine
- New England Journal of Medicine
- British Medical Journal
- Journal of Trauma
- Circulation
- Lancet • JAMA

1.3 Suggested preparatory training courses:

- Advanced Trauma Life Support (ATLS)
- Advanced Medical Life Support (AMLS)
- Advanced Cardiovascular Life Support for Experienced Providers (ACLS-EP)
- Advanced Neonatal Life Support (Neonatal Resuscitation Programme)
- Paediatric Advanced Life Support (PALS) and/or Advanced Paediatric Life Support (APLS)
- Emergency Medicine Society of South Africa Emergency Ultrasonography Core Course
- Advanced Airway Management Course
- CMSA Examination preparation course

APPENDIX E**PROPOSED TRAINING REQUIREMENTS FOR THE FELLOWSHIP EXAMINATION FCEM(SA)****1.0 REGISTRATION AS A SPECIALIST**

- 1.1 Candidates will be expected to complete the training requirements, as laid down by the Health Professions Council of South Africa (HPCSA), prior to registration as a specialist.
- 1.2 Training will be in the form of a 4-year full-time rotation in a HPCSA-approved training post in approved institutions.

2.0 POST-GRADUATE TRAINING PROGRAMME

- 2.1 A typical 4-year full-time training programme would normally include rotations in:
 - 2.1.1 Internal medicine, including cardiology, respiratory medicine, endocrinology and infectious diseases
 - 2.1.2 General surgery including thoracic and neurosurgery
 - 2.1.3 Orthopaedic surgery
 - 2.1.4 Paediatrics, including neonatology
 - 2.1.5 Obstetrics and gynaecology
 - 2.1.6 Anaesthetics
 - 2.1.7 Critical care
 - 2.1.8 Otorhinolaryngology
 - 2.1.9 Ophthalmology
 - 2.1.10 Psychiatry
 - 2.1.11 Emergency medical services, including pre-hospital medicine, retrieval medicine and disaster medicine study
 - 2.1.12 Emergency medicine department, including adult and paediatric trauma and medical emergencies

3.0 CRITICAL PERFORMANCE PORTFOLIO

- 3.1 A comprehensive CRITICAL (Certified Record of In-service Training Including Continuous Assessment and Learning) PERFORMANCE PORTFOLIO must be submitted and approved by the CMSA prior to admission to the Part II examination.
- 3.2 Candidates must be prepared to discuss aspects of their CRITICAL PERFORMANCE PORTFOLIO in the Part II examination.

4.0 TRAINING IN EMERGENCY ULTRASONOGRAPHY

- 4.1 Before applying for the FCEM(SA) Part II examination, all candidates must have completed training and received CMSA-approved accreditation in emergency ultrasonography. The Certificate of accreditation for point-of-care ultrasonography must be presented to the CMSA at the time of applying for the FCEM(SA) Part II examination.
- 4.2 The curriculum for emergency ultrasonography training should comprise the following components:
 - 4.2.1 Extended focused assessment sonography in trauma (EFAST).
 - 4.2.2 Abdominal aortic aneurysm (AAA) assessment.
 - 4.2.3 Focused emergency echocardiography in resuscitation (FEER).
 - 4.2.4 Deep venous thrombosis (DVT) assessment by limited compression ultrasound (LCU).
 - 4.2.5 Central venous access with ultrasound guidance.
Clinical and Knowledge integration including
Focused cardiac ultrasound and haemodynamic
Advanced thoracic (lung) and airway ultrasound
- 4.3 Emergency ultrasonography accreditation should comprise the following elements:
 - 4.3.1 A CMSA-approved one-day course with at least 4 hours dedicated to hands-on training.
 - 4.3.2 A theoretical assessment by means of a web-based examination.
 - 4.3.3 Prescribed training as per the requirements of the Emergency Ultrasonography curriculum.
 - 4.3.4 A final competency assessment by an independent examiner approved by the CMSA.
 - 4.3.5 The contents of the curriculum may be examined in any component of the FCEM(SA) Part II examination.

APPENDIX F**GUIDELINES FOR EXAMINERS AND CONVENORS****1.0 GUIDELINES FOR EXAMINERS:**

- 1.1 When setting the examination, examiners should guard against placing undue emphasis on aspects which are esoteric, uncommon or of minimal clinical significance.
- 1.2 Examination questions should be appropriate to the theory and practise of emergency medicine.
- 1.3 Examiners should be reasonable when setting written questions about new drugs or techniques, particularly if they are not significantly related to clinical practise.
- 1.4 Ambiguity must be avoided, and the average candidate should have a clear understanding of what is required in the answer.
- 1.5 After each examination, the examiners should meet and discuss the examination and any problems arising from any aspect of the examination.

2.0 GUIDELINES FOR CONVENORS

- 2.1 The overall convenor should ensure that:
 - 2.1.1 There is no unnecessary duplication between different examiners or different parts of the examination
 - 2.1.2 Questions are fair and not ambiguous, and that abbreviations are avoided.
 - 2.1.3 Questions cover an overall spread of the subject.
 - 2.1.4 The standard of the examination be maintained equally between the individual examiners.