



CMSA

The Colleges of Medicine of South Africa NPC

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JOHANNESBURG OFFICE EXAMINATIONS & CREDENTIALS

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FC Path(SA) Clin Blueprint

1.0 Blueprint: FC Path (SA) Clinical Pathology Examination

Purpose of the examination: Summative

Competency:

- Content knowledge of the College Clinical Pathology curriculum
- Application of this knowledge to the diagnosis and management of disease as well as to the management of laboratory services
- Written and verbal communication skills

Weighting:

The final examination, with an overall pass mark of 50%, comprises written, practical and oral examinations. The weighting of each component:

- Written examination 50% of the total mark
 - Paper I: Chemistry: 100 marks
 - Paper II: Haematology: 100 marks
 - Paper III: Microbiology and Virology : 100 %
- Practical examination 50% of total mark
 - Subminimum requirements for written and practical
 - A candidate must pass two out of the three written components to pass written section under condition that:
 - The third component score was 47.5-49.9% AND
 - Total score for written (all 3 components) $\geq 50\%$
 - This requirement will also apply to the three practical components

2.0 Format of the written examination

Candidates will write three 3-hour closed-book written examination papers.

The format of the examination will include the following:

- All questions have to be answered for each paper. No choices will be offered.

2.1 Chemistry

FC Path (SA) Clin Path Chemistry examination will comprise one written paper. The detail and weighting is given below.

Content:

One paper each with two sections. 50% of the paper will comprise laboratory management and 50% will comprise Applied Clinical Chemistry.

Section One
Twenty MCQs

Section Two

Six short answer questions X 10 marks each
Four short answer questions X 5 marks each

Laboratory management which includes:

- Laboratory governance and audits; IQC/EQA; Reference ranges; Method evaluations;
- Budgets; Accreditation; POCT; Health & Safety; Ethics; Occupational, Health / Insurance / Wellness testing
- Analytical techniques and instrumentation and basic laboratory principles
- Pre-analytical concepts (including Biological variation)
- Laboratory Statistics

Applied Clinical Chemistry

- Knowledge of aetiology, pathology, pathogenesis, investigation, diagnosis, prognosis and principals of treatment of disorders and diseases in the following areas:
 - Water and electrolytes and Acid Base Disorders
 - Kidney Disease
 - Liver Disease
 - Cardiovascular Disease
 - Gastrointestinal Disease
 - Endocrine disorders including Diabetes Mellitus, Thyroid disorders, Pituitary and Adrenal Disorders
 - Reproductive disorders
 - Disorders of pregnancy

2.2 Haematology

FC Path (SA) Clin Path Haematology examination will comprise one written paper. The detail and weighting is given below. The content to be covered, with approximate weighting, is as follows:

Section One
Twenty MCQs

Section Two

Six short answer questions X 10 marks each
Four short answer questions X 5 marks each

Content:

- Haematology laboratory methodology and its application (knowledge, comprehension and critical skills in the selection of tests, indications for test, principles of test, test interpretation, limitations of test and differential diagnosis) in the following areas:
 - Morphology, coagulation testing, automation/instrumentation, cytogenetics, molecular diagnosis, flow cytometry
- Laboratory management Quality assurance/accreditation
- Knowledge of aetiology, pathology, pathogenesis, investigation, diagnosis, prognosis and principals of treatment of disorders and diseases in the following areas:
 - Bleeding disorders
 - Thrombotic disorders
 - Platelet disorders

- Red cell disorders
- White cell disorders
- Myeloid and lymphoid malignancies
- Consultative haematology (including infections, paediatrics, surgical, obstetrics and gynaecology, ICU, nephrology, rheumatology, etc)
- Haematologic emergencies
- Blood transfusion

2.3 Microbiology and Virology (120 marks)

FC Path(SA) Clin Path Microbiology examination will comprise one written paper.

Section One

Twenty MCQs

Section Two

Six short answer questions X 10 marks each

Four short answer questions X 5 marks each

Content:

- **Fundamentals of microbiology** (10%)(including bacteriology, mycology, parasitology) including pathogenesis of infection, virulence mechanisms, microbial genetics and antimicrobial resistance mechanisms
- **Clinical microbiology** (30%) including clinical syndromes, epidemiology of infection, infection control, diagnostic approach and antimicrobial therapy
- **Laboratory diagnostics**(30%) including specimen collection and transport, microscopy, laboratory media, antimicrobial susceptibility testing, molecular diagnostics, serology and interpretation of laboratory tests
- **Laboratory management**(30%) including quality management, accreditation, data handling, evaluation and validation of tests, laboratory safety and needs analysis/budgets

2.4 Virology

FC Path(SA) Clin Path Virology examination will comprise part (20 marks)

Content:

- Basic Virology Concepts
 - Viral pathogenesis and immunology
 - Antiviral therapy, vaccines and novel therapeutics
 - Infection prevention and control in the laboratory
 - Basic concepts in epidemiology and outbreak response
- Clinical Virology

Disease presentation, pathogenesis, treatment, prevention and infection control, epidemiology, laboratory diagnosis and monitoring and disease surveillance and eradication:

- HIV/AIDS
- Sexually transmitted infections
- Viral Hepatitis
- Viral infections of the gastro-intestinal system (gastroenteritis)
- A basic approach to Viral Hemorrhagic Fevers
- Viral infections of central nervous system
- Viral infections of the cardiovascular system
- Viral infections of respiratory tracts
- Childhood viral infections
- Viral infections in pregnancy, the fetus and neonate
- Aspects of viral infections related to transfusion medicine
- Viral infections in the immune-compromised patient

- Diagnostic Virology and laboratory management
 - Virology methodology and its application (knowledge, comprehension and critical skills in the selection of tests, indications for test, principles of test, test interpretation, limitations of test and differential diagnosis)

3.0 Format of the practical examination

The practical examination will run over 3 days. The examination tests the candidate's ability to integrate laboratory results and suggest additional/alternative processes. This will include the ability of providing a provisional diagnosis, leading to a definitive diagnosis and advising on patient management. The practical will consist of questions from individual disciplines, as well as, if possible, integrated cases which combine aspects from multiple disciplines.

Subminimum required for each discipline's practical examination is 50%.

3.1 Clinical Chemistry

Paper I: OSPE and calculations (50% of mark)

Paper II: Cases (50% of mark)

3.2 Haematology

Paper I: Morphology (including flow cytometry) (70% of mark)

Paper II: Coagulation and special haematology (including blood transfusion) (30% of mark)

- There will be no subminimum for Clinical Pathology candidates in haematology morphology component

3.3 Microbiology and Virology

Paper I: Long cases (50 marks)

Paper II: Short "OSPE" type cases (50 marks)

The long cases are designed to test candidates' ability to interpret and act on preliminary results and give advice to both clinicians and laboratory staff regarding further management / interpretation / processing, as necessary. In some cases, the long cases may be integrated with questions from other disciplines. Microbiology practical will be conducted over two days.

Paper: Virology Cases (20 marks)

The practical examination aims to assess the candidate's ability to provide a provisional diagnosis, leading to a definitive diagnosis and advising on patient management.

The examination will consist of one paper of clinical cases which require providing solution to various laboratory problems, interpretation of results and assessment of laboratory.