

Table of Specifications

PhD Entrance Exam

Chemical and Molecular Pathology

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| **Sr. No** | **Topic** | **MCQs** |
| **Level of Difficulty** | **Application** |
| 1 | Clinical Chemistry Pathophysiology- I including following topics:   * Electrolytes and Acid Base Disorders * Liver Function Tests * Renal Function Tests | 10 |
| 2 | Clinical Chemistry Pathophysiology- II including following topics:   * Cardiac biomarkers * Lipid Disorders * Iron Disorders * Disorders of Bones * Others | 10 |
| 3 | Basic Laboratory Principles   * Quality Management * Laboratory Water * Basic Instrument Handling   + Centrifuge   + Water Bath   + Pipettes   + Glass ware   + Refrigerators   + Osmometers   + Analytical Balance   + pH Meter | 10 |
| 4 | Analytical Techniques /Lab instruments   * Optical Techniques * Electrochemistry * Electrophoresis * Lab Automation * ELISA | 10 |

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|  | * HPLC * GC/MS |  |
| 5 | Special Clinical Chemistry Pathophysiology I including following topics:   * Diabetes Mellitus * Thyroid Disorders * Parathyroid Disorders * Adrenal Disorders * Pituitary Disorders | 10 |
| 6 | Special Clinical Chemistry Pathophysiology II including following topics:   1. Tumour Markers 2. Paediatric Metabolic Disorder 3. Therapeutic Drug Monitoring 4. Toxicology | 10 |
| 7 | Laboratory Management   * Clinical evaluation of methods * Establishment and use of reference values * Preanalytical variables and biological variation * Laboratory Information System | 10 |
| 8 | Molecular Pathology   * DNA: Structure and Function * RNA: Structure and Function & Types * Protein: Structure and Function * DNA regulatory sequences and regulatory protein * DNA Replication, Damage and Repair * Transcription/ Translation in Prokaryotes& Eukaryotes | 10 |
| 9 | ***Techniques in Molecular Pathology***   * PCR types and procedure * DNA/RNA Extractions * Restriction Endonucleases * Recombinant DNA technology   Gel Electrophoresis | 05 |
| 10 | * Research Methodology * Biostatistics/Analytical * Medical writing/Bioethics | 15 |
| **Total** | | **100** |

**Postgraduate Department RMU**