

 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
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| 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**