Table of Specification –PhD Chemical Pathology Spring 2026

NUMS Entry Test

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 ○ HPLC ○ GC/MS	10
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: a. Tumour Markers b. Paediatric Metabolic Disorder c. Therapeutic Drug Monitoring d. 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 Biology ○ 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*** ○ 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**