

Table of Specification –PhD Molecular Medicine Spring 2026

NUMS Entry Test

S.No	TOPIC	MCQs
1	<ul style="list-style-type: none"> ○ Nucleotide & Protein Chemistry ○ Structure of Nucleotides ○ Structure, types and functions of nucleic acids ○ Protein structure (Primary, secondary, tertiary and quaternary) ○ Protein folding and misfolding ○ Transmembrane proteins 	10
2	<ul style="list-style-type: none"> ○ Enzymology ○ Isoenzymes ○ Enzyme Inhibition ○ Enzyme Regulation ○ Role of enzymes in diagnosis and therapeutics ○ Cytochrome P-450 Monooxygenase System 	10
3	<ul style="list-style-type: none"> ○ Basic Molecular Biology ○ DNA replication ○ Transcription and posttranscriptional modifications ○ Translation and posttranslational modifications ○ DNA Repair Mechanisms ○ Mutations 	25
4.	<ul style="list-style-type: none"> ○ Xenobiotics and cancer metabolism ○ Role of genetics in cancer ○ Cell apoptosis ○ Oxidants and antioxidants 	10
5	<ul style="list-style-type: none"> ○ Genetic basis of diseases/clinical conditions ○ Diabetes mellitus ○ Glycogen storage diseases ○ Disorders of lipid metabolism ○ Obesity ○ Vitamin D & K metabolism ○ Hemoglobin structure, Hemoglobinopathies (genetic basis) ○ Glucose-6-phosphate dehydrogenase Deficiency ○ Inborn errors of protein metabolism ○ Cystic Fibrosis ○ Severe Combined Immunodeficiency 	15
6	<ul style="list-style-type: none"> ○ Molecular Biology Techniques ○ Polymerase chain reaction (PCR) ○ DNA /RNA extraction ○ Restriction endonucleases ○ Probes ○ Gel electrophoresis ○ Recombinant DNA Cloning ○ Restriction Fragment length polymorphism ○ ELISA ○ DNA sequencing 	15
7	<ul style="list-style-type: none"> ○ Research methodologies 	15
Total		100