Table of Specification – PhD Biological Sciences - Spring 2026

NUMS Entry Test

TOS (100 MCQs)		2 hours
Mathematics		**5**
Functional English		**10**
Analytical reasoning		**5**
Biochemistry		**15**
i)	Macromolecules (structure and function)	
ii)	Cellular metabolism and Bioenergetics	
iii)	Enzymology	
Cell and Molecular Biology		**15**
i)	Cell organelles (structure and function)	
ii)	DNA replication, transcription, translation, repair	
iii)	Gene regulation	
iv)	Cancer Biology	
Research methodology/ethics		**10**
i)	Ethical issues in biological research	
ii)	Scientific method in research (research question, hypothesis, literature review, study designs)	
Research techniques		**10**
i)	Molecular methods (including PCR, RT-PCR, ELISA, Sequencing)	
ii)	Analytical methods (spectrophotometry, HPLC and GC)	
Biotechnology		**10**
i)	Health biotechnology	
ii)	Nano biotechnology	
Microbiology and Immunology		**10**
i)	Bacteriology	
ii)	Virology	
iii)	Vaccinology	
iv)	Immunity	
Biostatistics		**5**
i)	T-test	
ii)	Chi-square	
iii)	ANOVA	
iv)	Regression	
Bioinformatics		**5**
i)	Multiple sequence alignments	
ii)	Data retrieval	
iii)	Molecular Docking	