National University of Computer & Emerging Sciences
MT-2008 Multivariable Calculus
Spring 2025

Course Content for Mid-Term -II Exam

Content/Topics	Question set
Tangent Planes and Normal Vectors: Tangent Planes and Normal Vectors	**Ex13.7** [3-12]
Extreme value of the function of two variables: Absolute & Relative Extrema, Extreme Value theorem, The second order Partials test	**Ex13.8** [1,2, 9-18, 31-40]
Lagrange Multipliers Method: Constrained Maxima and Minima by Lagrange multipliers	**Ex 13.9** [5-12]
Multiple Integral: Double Integrals, Fubini's theorem	**Ex 14.1** [1-16]
Topics in Vector Calculus: Vector Fields, gradient, divergence, and curl	**Ex15.1** [17-28]
Gradient Descent Algorithm **Convex Optimization Problems (Material will be provided)**	**Material on GCR**