

MVC-Syllabus For Final Exam

Contents/Topics	Exercises	CLO	Practice Questions
Limits and Continuity: Limit Along Curves, open and closed sets, continuity, Limits at discontinuities, and Limits by converting into polar coordinates.	13.2	2	1-26,34, 35, 38, 39,40
Differentiability, Differentials, and Local Linear Approximation	13.4	2	9-26,33-40
Directional Derivatives and Gradients: Directional Derivatives, Gradients, Properties of gradients, Gradients are normal to level curves.	13.6	1	1-45,53-66
Extreme value of the function of two variables: Absolute & Relative Extrema, Extreme Value theorem, The second order Partial test. Lagrange Multipliers Method Convex Function & Convex Optimization	13.8 13.9	3 3 3	1-4, 9-18, 31- 40 5-12
Double Integral over non-rectangular region	14.2	2	1-12,15-25, 47-56
Double Integral in polar coordinates, Surface Area of the surfaces of the form $Z=f(x,y)$. Triple Integrals	14.3 14.4 14.5	3 1	1-10, 23-34 1-10 1-8
<u>Topics in Vector Calculus:</u>			
Vector Fields, gradient, divergence, and curl.	15.1	2	17-28
Line Integrals, Green's Theorem	15.2 15.4	3	7-14, 19-22 3-10