

King Fahd University of Petroleum and Minerals Department of Mathematics and
Statistics

Math-201 Semester-163 QUIZ V

NAME:

S.No.

ID:

Maximum Marks: 10

Section:06

Time Allowed: 30 minutes

(1) Find the absolute maximum and minimum values of the function

$f(x, y) = x^2 - xy + y^2 + 1$ on the closed triangular plate in the first quadrant bounded by the lines $x = 0, y = 4, y = x$.

(2) Use the Lagrange Multipliers find the maximum and minimum values of

$f(x, y) = 4x^2 - 4xy + y^2$ subject to the constraint $g(x, y) = x^2 + y^2 = 25$.