King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math-201   Semester-161   QUIZ VI

NAME: Serial No.   ID:

Maximum Marks: 8   Section:01   Time Allowed: 30 minutes

(1) Find the local maximum and minimum values and saddle points of
$$f(x, y) = x^4 + y^4 - 4xy + 1.$$
(2) Use Lagrange multipliers to find the maximum and minimum values of the function $f(x, y, z) = 2x + 6y + 10z$, subject to constraint $x^2 + y^2 + z^2 = 35$.