

King Fahd University of Petroleum and Minerals  
Department of Mathematics and Statistics  
Math-201 Semester-152 QUIZ V

NAME:

S.No.

ID:

Maximum Marks: 10

Section: 13

Time Allowed: 25 minutes

(1) Find the local extreme values of the function

$$f(x, y) = 3y^2 - 2y^3 - 3x^2 + 6xy.$$

(2) Use Lagrange multipliers to find the maximum, and minimum values of  
 $f(x, y, z) = x - 2y + 5z$  on the sphere  $x^2 + y^2 + z^2 = 30$ .