

King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math-201 Semester-093 QUIZ IV

NAME:

S.No.

ID:

Maximum Marks: 15

Section:01

Time Allowed: 25 minutes

(1) If $f(x, y) = \frac{xy^4}{x^2+y^8}$, does the limit $\lim f(x, y)$ as $(x, y) \rightarrow (0, 0)$ exist? Justify your answer.

(2) Find the equation of tangent plane to the surface $z = 4x^2 - y^2 + 2y$ at $(-1, 2, 4)$.

(3) If $x - z = \arctan(yz)$, then find z_x .

(4) Find the direction in which the function $f(x, y) = x^4y - x^2y^3$ decreases fastest at the point $(2, -3)$