KFUPM--Term 151

Math 201 Quiz 4(a) Time: 20 minutes Date: 24-11-15

Name	ID	Sr	Sec	Marks:- /8

Q 1. Find the equation of the tangent plane and normal line at the point $(-2,1,-3)$ to the ellipsoid

$$\frac{x^2}{4} + y^2 + \frac{z^2}{9} = 3.$$

Q2. Find the absolute maximum and minimum values of $f(x,y) = 2x + 2y - x^2 - y^2$ on the triangular region in the first quadrant bounded by the lines $x = 0, y = 0$ *and* $y = 5 - x$.

KFUPM--Term 151

Math 201 Quiz 4(b) Time: 20 minutes Date: 24-11-15

Name	ID #	Sr #	Sec.	Marks:- $/_8$

Q 1. The two surfaces $x^2 + y^2 = 2$ and $x + z = 4$ meet in an ellipse. Find parametric equations for the line tangent to the ellipse at $(1, -1, 3)$.

Q2. Find the local extreme values of the function $f(x, y) = x^3 + 3xy + y^3$.

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Math 201 Quiz 4(c) Time: 20 minutes Date: 24-11-15

Name	ID #	Sr #	Section #	Marks:- $/_8$

Q 1. By about how much will $f(x, y, z) = e^x \cos yz$ change as the point $P(x, y, z)$ moves from the origin a distance of $ds = 0.1$ unit in the direction $2\boldsymbol{i} + 2\boldsymbol{j} - 2\boldsymbol{k}$?

Q2. Find the local extreme values of the function $f(x, y) = x^3 - y^3 - 2xy + 6$.

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Math 201 Quiz 4(d) Time: 20 minutes Date: 24-11-15

Name	ID	Sr	Sec	Marks:- /8

Q 1. Find the linearization of $f(x,y) = x^2 - xy + \frac{1}{2}\, y^2$ at the point $(3,2)$.

Q2. Find the absolute maximum and minimum values of $f(x,y) = 1 + 2x + 2y - x^2 - y^2$ on the triangular region in the first quadrant bounded by the lines $x = 0, y = 0\ and\ y = 7 - x$.