SRM Institute of Science and Technology
DEPARTMENT OF MATHEMATICS
21MAB101T: Calculus and Linear Algebra
ACADEMIC YEAR 2022-2023 (ODD)
Tutorial-2 (Unit-2)

1. Examine the following function for extreme values:

$$f(x, y) = x^4 + y^4 - 2x^2 + 4xy - 2y^2.$$

2. Discuss the maxima and minima of $f(x, y) = x^3y^2(1 - x - y)$.
3. In a plane triangle, find the maximum value of $cosAcosBcosC$.
4. Find the relative maximum and minimum values of the function

$$f(x, y) = 2(x^2 - y^2) - x^4 + y^4.$$

5. Given $x + y + z = a$, find the maximum value of $x^m y^n z^p$.