NAME: S.No. ID:

Maximum Marks: 10 Section:06 Time Allowed: 15 minutes

1) Find the domain and range of \( f(x, y, z) = e^{\sqrt{z-x^2-y^2}} \). Also, evaluate \( f(2, -1, 6) \).

2) Find the level surfaces of \( f(x, y, z) = x^2 - y^2 + z^2 \).

3) If \( f(x, y) = \frac{xy^4}{x^2+y^8} \), does the limit \( \lim_{(x, y) \to (0, 0)} f(x, y) \) exist? Justify your answer.

4) Find the set of points at which the function \( g(x, y) = \sin^{-1}(x^2+y^2) \) is continuous.