

Department of Mathematics and Statistics KFUPM
MATH 101-09 Quiz#6, Time: 40 mins

Student's Name: _____ ID: _____ Section No: _____

Q.No.1:- Find all the values of c in $(-2,2)$ that satisfy the conclusion of the Mean Value Theorem for $f(x) = x^2 e^{-x^2}$ on $[-2,2]$.

Final Answer (**1 point**): _____

Work Shown (**5 points**):

Q.No.2:- Find $\lim_{x \rightarrow 1} (2 - x)^{\tan(\pi x/2)}$

Final Answer (1 point): _____

Work Shown (6 points):

Q.No.3:- For the function $f(x) = \ln(1 - \log_{10} x)$,

(i) Find the domain of the function.

Final Answer (1 **point**): _____

Work Shown (2 **points**):

(ii) Find the interval(s) where the function is decreasing.

Final Answer (1 **point**): _____

Work Shown (3 **points**):

(iii) Find the possible point(s) of Inflection.

Final Answer (1 **point**): _____

Work Shown (4 **points**):