King Fahd University of Petroleum and Minerals

Department of Mathematics and Statistics   Spring Semester (Term 162)

Quiz 2   MATH 132   Dr. Taleb Alkurdi

Name_____   ID_____   Serial Number _____

I mportant Note: Please show your work in order to get the full grade. There is only one point for the final answer and the rest will be for the details of the work.

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Provide an appropriate response.

1) Determine the intervals on which the function is increasing and on which it is decreasing.   1) _____
   Also determine the points of relative maxima and relative minima.

   $f(x) = \dfrac{x^2}{e^x}$

2) Find the absolute extrema for $y = \dfrac{x^2}{e^x}$ on the interval $[0, 3]$ and where they occur.   2) _____

3) Find the intervals where the graph of $y = f(x)$ is concave up and where it is concave down.   3) _____

   Do not sketch its graph. Also determine its points of inflection. $f(x) = \dfrac{x^2}{e^x}$