KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS
DEPARTMENT OF MATHEMATICS AND STATISTICS
MATH 102 - QUIZ 6

Name:
Student ID #:

Question 1. Decide whether the following series converge or diverge

a) (2-points) $\displaystyle\sum_{n=1}^{\infty}\left(1-\frac{1}{n}\right)^{n^2}$

b) (2-point) $\displaystyle\sum_{n=1}^{\infty}\frac{\cos(n\pi/4)}{n!}$(Hint: Use Comparison Test and Ratio Test together)

c) (3-points)$\displaystyle\sum_{n=1}^{\infty}\frac{n}{(\ln n)^n}$(Hint: Use Root Test and L'Hospital Rule)

Question 2. (3-points) At least how many terms are needed to estimate the sum of the series $\displaystyle\sum_{n=1}^{\infty}\frac{(-1)^n}{10^{n+1}}$ with an error less than 10^{-4}.

Your Solution.