Differential and Integral Calculus (MATH-205)

QZ-I/Semester II (2022-23)   KSU ID: _____

Date: Sunday, December 25, 2022   **Max. Points:**   10

Question I: $(3°)$ Determine whether the following sequence converges or diverges. Find its limiting value, if it converges.

$$\left\{ \frac{n^{-10}}{\sec n} \right\}_{n=1}^{\infty}$$

Question II: $(3°)$ Investigate the behavior of the infinite series $\sum\limits_{n=1}^{\infty} \frac{\sin n + 2^n}{n + 5^n}$.

Question III: $(4°)$ Use integral test to determine whether the following series converges or diverges.

$$\sum_{n=1}^{\infty} \frac{\ln n}{n^4}$$

—- Good Luck —-

Start your solutions from here .... you have 35 minutes to complete this quiz.