Department of Mathematics and Statistics (KFUPM)
Math-333 Semester-181 QUIZ IV

NAME: S.No. ID:
Maximum Marks: 8 Section:04 Time Allowed: 40 minutes

(1) Show that the set of functions $\{\sin(nx)\}, n = 1, 2, 3, ...$ is orthogonal on $[0, \pi]$.

(2) Find the Fourier series of the function $f(x) = \begin{cases} 0, & -\pi < x < 0 \\ 1, & 0 \leq x < \pi. \end{cases}$

(3) Expand $f(x) = x^2, \quad 0 < x < L$, in a cosine series.