

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

NAME:

S.No.

ID:

Maximum Marks: 8

Section:03

Time Allowed: 40 minutes

(1) Show that the set $\{1, \cos x, \cos 2x, \dots\}$ is orthogonal on $[-\pi, \pi]$.

(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 $f(x) = x$, $0 < x < \pi$, in a sine series.