King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math-301   Semester-132   QUIZ IV

NAME: S.No.   ID:

Maximum Marks: 10   Section:03   Time Allowed: 30 minutes

(1) Show that the set $\{1, cosx, cos2x, ...\}$ is orthogonal on the interval $[-\pi, \pi]$.

(2) Expand

$$f(x) = \begin{cases} 0, & -\pi < x < 0, \\ \pi - x, & 0 \leq x < \pi. \end{cases}$$

in a Fourier series.

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