

國立虎尾科技大學九十六學年度第二學期平時考(五)試題

班級:四電一甲 科目:工程數學(一) 時間:2008/5/23(星期五) 12:10-13:10

1 Find $f(t) = t * t$ using convolution theorem.

2. Find the Laplace transform of $f(t) = te^{-4t}$.

3. Calculate $f(t) = \int_0^t \sin(t-\tau)e^{-3(t-\tau)} \delta(\tau-5)d\tau$.

4. Determine the Fourier series of $f(x) = \begin{cases} 0 & -\pi < x < 0 \\ 1 & 0 < x < \pi \end{cases}$ and

$$f(x) = f(x + 2\pi).$$