

Signals and Systems Quiz#1

Name: _____

ID No.: _____

93/10/04

- (10%) _____ represents operations performed in an implementation of a system and shows how the interrelations among the many signals.
- (10%) An image can be represented as a function of _____ spatial variables. Videos are time-varying images and require another independent variable for _____.
- (10%) _____ is a system whose input is a continuous-time signal $x(t)$ and whose output is the corresponding sequence of samples, $x[n] = x(nT_s)$.
- (10%) Determine whether or not each of the following signals is periodic or not: (a) $x_1(t) = 2e^{j(t+\pi/4)}u(t)$ _____; (b) $x_2(t) = e^{(-1+j)t}$ _____.
- (10%) The Castesian form of the complex number $j\sqrt{2}e^{j\pi/2}$ is _____.
- (20%) Determine the values of $P_\infty =$ _____ and $E_\infty =$ _____ for the signal $x(t) = e^{-3t}u(t)$.
- (20%) Determine the fundamental period of the continuous-time signal $x(t) = 2\cos(10\pi t + 1) - \sin(4\pi t - 1)$.
- (20%) Determine the fundamental period of the discrete-time signal $x[n] = e^{j(2\pi/5)n} - e^{j(3\pi/4)n}$.