Assignment-0

The due date for submitting the assignment can pass. As per our norm, you have not submitted this assignment.

Due on 2020-01-27, 22:59 HKT

1. The carrier frequency of the signal $x(t) = 3000\sin(3000\pi t)$ is
   1 point
   - 3000 Hz
   - 30 Hz
   - 3 MHz
   - 0.3 MHz

   Accepted Answers:
   - 3000 Hz

2. The signal $x(t) = \frac{\sin(\omega t)}{\sin(\omega)}$ for $0 < \omega t < \pi$ is
   1 point
   - A pure sin signal
   - A complex signal
   - A pure signal
   - A complex signal

   Accepted Answers:
   - A pure sin signal

3. The Fourier transform of the signal $x(t) = e^{-t}u(t)$ is
   1 point
   - $X(f) = \frac{1}{1+j2\pi f}$
   - $X(f) = \frac{2}{1+j2\pi f}$
   - $X(f) = \frac{1}{1+j4\pi f}$
   - $X(f) = \frac{2}{1+j4\pi f}$

   Accepted Answers:
   - $X(f) = \frac{2}{1+j2\pi f}$

4. The complex exponential Fourier series expansion of a signal $x(t)$ is of the form $a_n e^{j2\pi n t}$, $n = \ldots$, $a_n$ is a real number for the analysis of
   1 point
   - Continuous time periodic signals
   - Discrete time periodic signals
   - Discrete time signals
   - Continuous time signals

   Accepted Answers:
   - Continuous time periodic signals

5. The Fourier transform of $\cos(2t)$ is
   1 point
   - $\frac{1}{2}(\delta(f-1) + \delta(f+1))$
   - $\delta(f) - \delta(f-1)$
   - $\frac{1}{2}(\delta(f-1) - \delta(f+1))$
   - $\frac{1}{2}(\delta(f) - \delta(f-1))$

   Accepted Answers:
   - $\frac{1}{2}(\delta(f-1) - \delta(f+1))$

6. Consider the amplified modulation system with output $y(t) = 20\sin(2\pi f_1 t)$. This system is
   1 point
   - Only linear
   - Only time invariant
   - Only shift invariant
   - Only Kalman invariant

   Accepted Answers:
   - Only linear

7. Let the Fourier transform of signal $x(t)$ be denoted by $X(f)$. The Fourier transform of $y(t)$ is
   1 point
   - $X(f) * \delta(f)$
   - $\frac{1}{2}(\delta(f) - \delta(f-1))$
   - $\delta(f-1) - \delta(f+1)$
   - $\frac{1}{2}(\delta(f+1) - \delta(f-1))$

   Accepted Answers:
   - $\frac{1}{2}(\delta(f+1) - \delta(f-1))$

8. The 4G wireless standard is known as
   1 point
   - GSM
   - CDMA
   - LTE
   - UMTS

   Accepted Answers:
   - LTE

9. The role of communication system is typically modeled as
   1 point
   - A network
   - A machine
   - A computer
   - A system

   Accepted Answers:
   - A system