Assessment 0

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

1) If \( x(t) \) is square pulse of height 1 and is located between \( t = -1 \) and \( t = +1 \), then \( x(2t - 1) \) is located between

- \( t = 0 \) and \( t = 2 \),
- \( t = 0 \) and \( t = 1/2 \)
- \( t = -1/2 \) and \( t = 0 \)
- \( t = 1 \) and \( t = 2 \)

No, the answer is incorrect.
Score: 0
Accepted Answers:

2) For \( n \) even, solutions of the equation \( x^n + 1 = 0 \) are

- \( x = +j \)
- \( x = -j \)
- \( x = e^{-j(2k+1)\pi/n}, k = 0, 1, \ldots, n - 1 \),
- \( x = e^{j(2k+1)\pi/n}, k = 0, 1, \ldots, n - 1 \).

No, the answer is incorrect.
Score: 0
Accepted Answers:

3) \( H(s) \) is an analog filter with two zeros at \( s = a \) and \( s = b \), and three poles at \( s = A \), \( s = B \) and \( s = C \). If \( H(s) \) is causal and stable, then

- \( a, b \) should be on the LHP in s-plane.
- \( a, b \) should be on the RHP in s-plane.
4) If $\delta(t)$ denotes the Dirac delta function, then convolution between $\delta(t-2\tau)$ and $\delta(t+\tau)$ is

- $\delta(t-\tau)$,
- $\delta(t+\tau)$
- $\delta^2(t-\tau)$
- $\delta^2(t+\tau)$.

No, the answer is incorrect.
Score: 0

5) Let $x(t)$ consist of a periodic train of impulses with period $T$, i.e., $x(t) = \sum_{n=-\infty}^{+\infty} \delta(t-nT)$. If the Fourier series expansion of $x(t)$ is given by $x(t) = \sum_{n=-\infty}^{+\infty} c_n e^{jn\omega_0 t}$, then

- $c_n = 1$, $\omega_0 = 2\pi T$,
- $c_n = \frac{1}{T}$, $\omega_0 = \frac{2\pi}{T}$,
- $c_n = \frac{1}{T}$, $\omega_0 = \frac{2T}{\pi}$
- $c_n = T$, $\omega_0 = \frac{2\pi}{T}$.

No, the answer is incorrect.
Score: 0

6) The dc function, $x(t) = 1$, $-\infty < t < +\infty$ has Fourier transform $X(j\omega)$ given by

- $2\pi \delta(\omega)$,
- $1$, $-\infty < \omega < +\infty$,
- $\delta(\omega)$,
- Does not exist.

No, the answer is incorrect.
Score: 0

Accepted Answers:
- $2\pi \delta(\omega)$,