QUIZ – ANSWER KEY

QUIZ NO: 95

TOPIC: ELECTRICAL ENGINEERING

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1. Discrete-time signals are _____ ?

    [A] Continuous in amplitude and continuous in time

    [B] Continuous in amplitude and discrete in time

    [C] Discrete in amplitude and discrete in time

    [D] Discrete in amplitude and continuous in time

    Answer: B

    Explanation:-

    A discrete-time signal is continuous in amplitude and discrete in time. It can either be present in nature or is sampled from an analogue signal. A digital signal is discrete in amplitude and time.

2. Determine the discrete-time signal: x(n)=1 for n≥0 and x(n)=0 for n<0 ?

    [A] Unit ramp sequence

    [B] Unit impulse sequence

    [C] Exponential sequence

    [D] Unit step sequence

    Answer: D

    Explanation:-

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- Unit step is defined by: x(n)=1 for n≥0 and x(n)=0 for n<0.

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3. Determine the product of two signals: $x_1(n) = \{2,1,1.5,3\}$; $x_2(n) = \{1,1.5,0,2\}$ _____

          [A] {2,1.5,0,6}

          [B] {2,1.5,6,0}

          [C] {2,0,1.5,6}

          [D] {2,1.5,0,3}

          Answer: A

          Explanation:-

          Product of discrete-time signals is computed element by element.
          $\Rightarrow x(n) = x_1(n) * x_2(n) = \{2\times1, 1\times1.5, 1.5\times0, 3\times2\} = \{2,1.5,0,6\}$.

4. Noise generated by an amplifier of radio is an example for?
          [A] Discrete signal

          [B] Deterministic signal

          [C] Random signal

          [D] Periodic signal

          Answer: C

          Explanation:-

          Random signal is the one which there is uncertainty before its actual occurrence.
          Noise is a best example for random signal.

5. Discrete time signal is derived from continuous time signal by _____ process ?

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[A] Addition

[B] Multiplying

[C] Sampling

[D] Addition and multiplication

Answer: C

Explanation:-

Sampling is a process wherein continuous time signal is converted to its equivalent discrete time signal. It is given by t = N*t.

6. In real valued function and complex valued function, time is _____ ?

[A] Real

[B] Complex

[C] Imaginary

[D] Not predictable

Answer: A

Explanation:-

Time is an independent variable and it is real valued irrespective of real valued or complex valued function. And time is always real.

7. What is single-valued function?

[A] Single value for all instants of time

[B] Unique value for every instant of time

[C] A single pattern is followed by after 't' intervals

[D] Different pattern of values is followed by after 't' intervals of time

Answer: B

Explanation:-

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Single-valued function means "for every instant of time there exists unique value of the function".

8. If x (-t) = -x (t) then the signal is said to be _____?

    [A] Even signal

    [B] Odd signal

    [C] Periodic signal

    [D] Non periodic signal

Answer: A

Explanation:-

Signals is said to be odd if it is anti- symmetry over the time origin. And it is given by the equation x (-t) = -x (t).

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9. Which of the following is true for complex-valued function ?

> [A] X (-t) = x*(t)
> [B] X (-t) = x(t)
> [C] X (-t) = – x(t)
> [D] X (-t) = x*(-t)

Answer: A

Explanation:-

Complex-valued function is said to be conjugate symmetry if its real part is even and imaginary part is odd and it is shown by the equation x(-t) = x*(t).

10. When x(t) is said to be non periodic signal ?

> [A] If the equation x (t) = x (t + T) is satisfied for all values of T
> [B] If the equation x (t) = x (t + T) is satisfied for only one value of T
> [C] If the equation x (t) = x (t + T) is satisfied for no values of T
> [D] If the equation x (t) = x (t + T) is satisfied for only odd values of T

Answer: C

Explanation:-

A signal x (t) is said to be non periodic signal if it does not satisfy the equation x(t) = x(t + T). And it is periodic if it satisfies the equation for all values of T = T0, 2T0, 3T0…

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