MULTIPLE CHOICE QUESTIONS

UNIT -I

1. The type of systems which are characterized by input and the output quantized at certain levels are called as a) analog
b) discrete
c) continuous
d) digital

Answer: b

2. The type of systems which are characterized by input and the output capable of taking any value in a particular set of values are called as a) analog
b) discrete
c) digital
d) continuous

Answer: d

3. An example of a discrete set of information/system is
a) the trajectory of the Sun
b) data on a CD
c) universe time scale
d) movement of water through a pipe

Answer: b

4. A system which is linear is said to obey the rules of
a) scaling
b) additivity
c) both scaling and additivity
d) homogeneity

Answer: c

5. A time invariant system is a system whose output
a) increases with a delay in input
b) decreases with a delay in input

c) remains same with a delay in input
d) vanishes with a delay in input

Answer: c

6. Should real time instruments like oscilloscopes be time invariant? a) Yes
b) Sometimes
c) Never
d) They have no relation with time variance

Answer: a

7. All real time systems concerned with the concept of causality are a) non causal
b) causal
c) neither causal nor non causal
d) memoryless

Answer: b

8. A system is said to be defined as non causal, when
a) the output at the present depends on the input at an earlier time
b) the output at the present does not depend on the factor of time at all
c) the output at the present depends on the input at the current time
d) the output at the present depends on the input at a time instant in the future

Answer: d

9. When we take up design of systems, ideally how do we define the stability of a system?
a) A system is stable, if a bounded input gives a bounded output, for some values of the input
b) A system is unstable, if a bounded input gives a bounded output, for all values of the input
c) A system is stable, if a bounded input gives a bounded output, for all values of the input
d) A system is unstable, if a bounded input gives a bounded output, for some values of the input

Answer: c

10. All causal systems must have the component of

a) memory
b) time invariance
c) stability
d) linearity

Answer: a

11. Amplifiers, motors, filters etc. are examples for which type of system?

a) Distributed parameter systems
b) Unstable systems
c) Discrete time systems
d) Continuous time systems

Answer: d

12. Which among the following systems are described by partial differential functions?

a) Causal Systems and Dynamic systems
b) Distributed parameter systems and linear systems
c) Distributed parameter systems and Dynamic systems
d) Causal systems and linear systems

Answer: c

13. Which one of the following systems is causal?

a) $y(t)=x(t)+x(t-3)+x(t^2)$
b) $y(n)=x(n+2)$
c) $y(t)=x(t-1)+x(t-2)$
d) $y(n)=x(2n^2)$

Answer: c

14. Which among the following is not a linear system?

a) $y(n) = Cx(2n) + 2D$
b) $y(t) = \int t0\ x(w)dw$
c) $y(t) + 2y(t) = tx(t)$
d) $y(n) = x(n)coswn$

Answer: a

15. Determine the nature of the system, $d^2y(t)/dt^2+2dy(t)/dt+4y(t)=x(t-4)$.

a) Static, linear, causal and time variant
b) Dynamic, non – linear, causal and time invariant
c) Static, non – linear, causal and time variant

d) Dynamic, non – linear, causal and time variant

Answer: b

16. Which one of the following is an example of a bounded signal? a) e^{t} coswt
b) e^{t} sinw(-t)
c) e^{-t} coswt
d) e^{t} cosw(-t)

Answer: c

17. A system produces zero output for one input and same gives the same output for several other inputs. What is the system called? a) Non – invertible System
b) Invertible system
c) Non – causal system
d) Causal system

Answer: a

18. Which among the following is a LTI system?

a) dy(t)/dt+ty(t)=x(t)
b) y(t)=x(t)cosπt
c) y(n)=x(n)+nx(n-1)
d) $y(n)=x^{3}$ (n+1)

Answer: d

19. For a bounded function, is the integral of the function from -infinity to +infinity defined and finite?
a) Yes
b) Never
c) Not always
d) None of the mentioned

Answer: c

20. For the signal x(t) = a – b*exp(-ct), what is the steady state value, and the initial value? a) c, b
b) c, c-a
c) a, a-b
d) b, a-b

Answer: c

21. For a double sided function, which is odd, what will be the integral of the function from - infinity to +infinity equal to? a) Non-zero Finite
b) Zero
c) Infinite
d) None of the mentioned

Answer: b

22. Find where the signal $x(t) = 1/(t^2 - 3t + 2)$ finds its maximum value between (1.25, 1.75): a) 1.40
b) 1.45
c) 1.55
d) 1.50

Answer: d

23. A signal is a physical quantity which does not vary with _ a) Time
b) Space
c) Independent Variables
d) Dependent Variables

Answer: d

24. Most of the signals found in nature are _____
a) Continuous-time and discrete-time
b) Continuous-time and digital
c) Digital and Analog
d) Analog and Continuous-time

Answer: d

25. Which one of the following is not a characteristic of a deterministic signal? a) Exhibits no uncertainty
b) Instantaneous value can be accurately predicted
c) Exhibits uncertainty
d) Can be represented by a mathematical equation

Answer: c

26. Determine the fundamental period of the following signal:sin60t. a) 1/60 sec
b) 1/30 sec
c) 1/20 sec
d) 1/10 sec

Answer: b

27. Sum of two periodic signals is a periodic signal when the ratio of their time periods is

a) A rational number
b) An irrational number
c) A complex number
d) An integer

Answer: a

28. Determine the Time period of: x(t)=3 cos(20t+5)+sin(8t-3). a) 1/10 sec
b) 1/20 sec
c) 2/5 sec
d) 2/4 sec

Answer: c

29. What is the even component of a discrete-time signal?

a) $x_e(t) = 12[x(t) + x(-t)]$
b) $x_e(n) = 12[x(n) + x(-n)]$
c) $x_e(t) = 12[x(t) – x(-t)]$
d) $x_e(n) = 12[x(n) – x(-n)]$

Answer: b

30. Determine the odd component of the signal: x(t)=cost+sint.

a) sint
b) 2sint
c) cost
d) 2cost

Answer: c

UNIT -II

31. Is the signal sin(t) anti-symmetric?

a) YES
b) NO

Answer: b

32. For an energy signal _____

a) E=0
b) P= ∞
c) E= ∞
d) P=0

Answer: d

33. Determine the power of the signal: x(t) = cos(t).

a) 1/2
b) 1
c) 3/2
d) 2

Answer: a

34. Is the following signal an energy signal?

x(t) = u(t) – u(t – 1)

a) YES
b) NO

Answer: a

35. A signal is anti-causal if _____

a) x(t) = 0 for t = 0
b) x(t) = 1 for t < 0
c) x(t) = 1 for t > 0
d) x(t) = 0 for t > 0

Answer: d

36. Is the signal $x(t)= e^{at} u(t)$ causal?

a) YES
b) NO

Answer: a

37. Is the signal x(n) = u(n + 4) – u(n – 4) causal?

a) YES
b) NO

Answer: b

38. 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

39. In real valued function and complex valued function, time is
a) Real
b) Complex
c) Imaginary
d) Not predictable

Answer: a

40. Discrete time signal is derived from continuous time signal by process.
a) Addition
b) Multiplying
c) Sampling
d) Addition and multiplication

Answer: c

41. 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

42. 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

43. 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

44. Fundamental frequency x[n] is given by _____

a) Omega = 2*pi /N
b) Omega = 2*pi*N
c) Omega = 4*pi *2N
d) Omega = pi / N

Answer: a

45. 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

46. Which of the following is an example of amplitude scaling?
a) Electronic amplifier
b) Electronic attenuator
c) Both amplifier and attenuator
d) Adder

Answer: c

47. Which of the following is an example of physical device which adds the signals? a) Radio
b) Audio mixer
c) Frequency divider
d) Subtractor

Answer: b

48. AM radio signal is an example for _____
a) y (t) = a x (t)
b) y (t) = x1 (t) + x2 (t)
c) y (t) = x1 (t) * x2 (t)
d) y (t) = -x(t)

Answer: c

49. Which of the passive component performs differentiation operation?
a) Resistor
b) Capacitor

c) Inductor
d) Amplifier

Answer: c

50. Which of the component performs integration operation?
a) Resistor
b) Diode
c) Capacitor
d) Inductor

Answer: c

51. Time scaling is an operation performed on _____
a) Dependent variable
b) Independent variable
c) Both dependent and independent variable
d) Neither dependent nor independent variable

Answer: b

52. Y (t) = x (2t) is _____
a) Compressed signal
b) Expanded signal
c) Shifted signal
d) Amplitude scaled signal by a factor of 2

Answer: a

53. Y (t) = x (t/5) is _____
a) Compressed signal
b) Expanded signal
c) Time shifted signal
d) Amplitude scaled signal by factor 1/5

Answer: b

54. In discrete signal, if y [n] = x [k*n] and k>1 then _____
a) Some samples are lost from x [n]
b) Some samples are added to x [n]
c) It has no effect on samples
d) Samples will be increased with factor k

Answer: a

55. The step function u (t) is integral of with respect to time t.
a) Ramp function
b) Impulse function
c) Sinusoidal function
d) Exponential function

Answer: b

56. The area under the pulse defines of the impulse.
a) Strength
b) Energy
c) Power
d) Duration

Answer: a

57. Unit impulse $\partial(t)$ is _____ of time t.
a) Odd function
b) Even function
c) Neither even nor odd function
d) Odd function of even amplitude

Answer: b

58. $\partial(at) = \frac{1}{a}\partial(t)$, this property of unit impulse is called ____
a) Time shifting property
b) Time scaling property
c) Amplitude scaling property
d) Time reversal property

Answer: b

59. Comment on the causality of y[n] = x[-n].
a) Time invariant
b) Causal
c) Non causal
d) Time varying

Answer: c

60. y(t) = x(t-2) + x(2-t). Comment on its causality:
a) Causal
b) Time variant
c) Non causal
d) All of the mentioned

Answer: c

UNIT -III

61. Comment on the causality of y[n] = n*x[n].

a) Time invariant
b) Time varying
c) Non causal
d) Causal

Answer: d

62. Comment on the linearity of y[n] = n*x[n].

a) Linear
b) Only additive
c) Not scalable
d) Non linear

Answer: d

63. Which of the following systems is linear?

a) y(t) = sin(x(t))
b) y(t) = log(x(t))
c) y(t) = cos(x(t))
d) y(t) = dx(t)/dt

Answer: d

64. Which of the following systems is stable?

a) y(t) = log(x(t))
b) y(t) = exp(x(t))
c) y(t) = sin(x(t))
d) y(t) = tx(t) + 1

Answer: c

65. Which of the following systems is time invariant?

a) y(t) = x(2t) + x(t)
b) y(t) = x(t) + x(1-t)
c) y(t) = -x(t) + x(1-t)
d) y(t) = x(t) + x(t-1)

Answer: d

66. Which of the following systems is memoryless?

a) y(t) = x(2t) + x(t)
b) y(t) = x(t) + 2x(t)
c) y(t) = -x(t) + x(1-t)

d) y(t) = x(t) + 2x(t+2)

Answer: b

67. For what value of k, will the following system be time invariant?
y(t) = x(t) + x(kt) – x(2t) + x(t-1)

a) 1
b) 2
c) 3
d) 2.5

Answer: b

68. Which one of the following is an example of a system with memory? a) Identity System
b) Resistor
c) y(n)=x(n)-2x(n)
d) Accumulator

Answer: d

69. Which among the following is a memory less system?
a) Delay
b) Summer
c) Resistor
d) Capacitor

Answer: c

70. In a continuous-time physical system, memory is directly associated with _____ a) Storage registers
b) Time
c) Storage of energy
d) Number of components in the system

Answer: c

71. A system with memory which anticipates future values of input is called _ a) Non-causal System
b) Non-anticipative System
c) Causal System
d) Static System

Answer: a

72. Determine the nature of the system: y(n)=x(-n).

a) Causal
b) Non-causal
c) Causal for all positive values of n
d) Non-causal for negative values of n

Answer: b

73. Which among the following is an application of non-causal system?

a) Image processing
b) RC circuit
c) Stock market Analysis
d) Automobile

Answer: c

74. Determine the nature of the given system: y(t)=x(sint)

a) Causal, Non-linear
b) Causal, Linear
c) Non-Causal, Non-linear
d) Non-causal, Linear

Answer: d

75. An inverse system with the original system gives an output equal to the input. How is the inverse system connected to the original system? a) Series

b) Cascaded
c) parallel
d) No connection

Answer: c

76. Which among the following is an invertible system?

a) $y[n] = 0$
b) $y[n] = 2x[n]$
c) $y(t) = x^2(t)$
d) $y(t) = dx(t)/dt$ Answer: b

77. Determine the nature of the system: $y[n] = x[n]x[n - 1]$ with unit impulse function as an input. a) Dynamic, output always zero, non-invertible

b) Static, output always zero, non-invertible
c) Dynamic, output always 1, invertible
d) Dynamic, output always 1, invertible

Answer: a

78. Determine the nature of the system: $y(t)= t^2 x(t-1)$

a) Linear, time invariant
b) Linear, time variant
c) Non-linear, time invariant
d) Non-linear, time variant

Answer: b

79. $y[n]=r^n x[n]$ is____system.

a) LTI
b) Time varying
c) Linear and time invariant
d) Causal and time invariant

Answer: b

80. A system is said to be linear if ___

a) It satisfies only the principle of superposition theorem
b) It satisfies only amplitude scaling
c) It satisfies both amplitude scaling and principle of superposition theorem
d) It satisfies amplitude scaling but not the principle of superposition theorem

Answer: c

81. If the input-output relationship is given by $y(t) = 2x(t) \frac{d}{dx} x(t)$. What kind of system it represents?

a) Linear system
b) Non linear system
c) LTI system
d) Linear but time-invariant system

Answer: b

82. What is a stable system?

a) If every bounded input results in the bounded output
b) If every bounded input results in an unbounded output
c) If every unbounded input results in a bounded output

d) If unbounded input results in bounded as well as unbounded output

Answer: a

83. If $x(t)= \partial(t-1)$ and $y(t)= e^{-t}$. This is an example for system. a) Stable

b) BIBO
c) Bounded input
d) Unstable

Answer: d

84. If $x(t)=e^{t}$, $y(t)= e^{-2t}$ this is a_____system.

a) Unstable
b) Stable
c) BIBO
d) Cannot classify the system

Answer: d

85. Which of the following is not true about systems having memory?

a) It is also called dynamic systems
b) The output signal depends on the past values of the input signal
c) It is also called static system
d) Resistive circuit

Answer: c

86. An example for non-causal system is ___

a) Amplifier
b) Oscillator
c) Rectifiers
d) Does not exists

Answer: d

87. Can impulse response be measured?

a) Impulse cannot be generated
b) Impulse can be generated
c) Can be measured
d) Cannot be measured

Answer: c

88. $y(t) = 2x(t) + 3t\, {}^{d}\!/_{dx}\, x(t)$ Is an example for _____

a) Time invariant system
b) Time varying system

c) LTI system
d) Time invariant and linear system

Answer: b

89. $y(t) = 5x(t) + 6 \frac{d}{dx} x(t)$ Is an example for__ system.

a) Time varying
b) Time invariant
c) Time varying and linear
d) Time varying and non linear

Answer: b

90. For the system, y (t) = x (t-5) – x (3-t) which of the following holds true?

a) System is Linear, time-invariant, causal and stable
b) System is time-invariant, causal and stable
c) System is Linear, time-invariant and stable
d) System is Linear, time-invariant and causal

Answer: c

UNIT -IV

91. For the system, y (t) = x (t2), which of the following holds true?

a) System is Linear, time-invariant, causal and stable
b) System is Linear and time-invariant
c) System is Linear and causal
d) System is Linear and stable

Answer: d

92. For the system, y (t) = cos 2πt x (t), which of the following holds true?

a) System is Linear, time-invariant, causal and stable
b) System is time-invariant, causal and stable
c) System is Linear, causal and stable
d) System is Linear, time-invariant and stable

Answer: c

93. For the system, y (t) = |x (t)|, which of the following holds true?

a) System is Linear, time-invariant, causal and stable
b) System is Linear, time-invariant and causal
c) System is Linear, time-invariant and stable

d) System is Linear, causal and stable

Answer: c

94. The impulse response of a continuous time LTI system is $H(t) = e^{-|t|}$. The system is

a) Causal and stable
b) Causal but not stable
c) Stable but not causal
d) Neither causal nor stable

Answer: c

95. The impulse response of a continuous time LTI system is $H(t) = e^{-t}\, u(3-t)$. The system is

a) Causal and stable
b) Causal but not stable
c) Stable but not causal
d) Neither causal nor stable

Answer: d

96. The impulse response of a continuous time LTI system is $H(t) = e^{-t}\, u(t-2)$. The system is

a) Causal and stable
b) Causal but not stable
c) Stable but not causal
d) Neither causal nor stable

Answer: a

97. What is the nature of the following function: $y[n] = y[n-1] + x[n]$? a) Integrator

b) Differentiator
c) Subtractor
d) Accumulator

Answer: d

98. Is the function $y[n] = x[n-1] - x[n-56]$ causal?

a) The system is non causal
b) The system is causal
c) Both causal and non causal
d) None of the mentioned

Answer: b

99. Is the function y[n] = y[n-1] + x[n] stable in nature? a) It is stable

b) It is unstable
c) Both stable and unstable
d) None of the mentioned

Answer: a

100. If n tends to infinity, is the accumulator function a stable one?

a) The function is marginally stable
b) The function is stable
c) The function is unstable
d) None of the mentioned

Answer: c

101. 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

102. 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

103. 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

104. The range for unit step function for u(t – a), is _____ a) t < a

b) t ≤ a
c) t = a
d) t ≥ a

Answer: d

105. Unit Impulse function is obtained by using the limiting process on which among the following functions?

a) Triangular Function
b) Rectangular Function
c) Signum Function
d) Sinc Function

Answer: b

106. When is a complex exponential signal pure DC?

a) $\sigma = 0$ and $\Omega < 0$
b) $\sigma < 0$ and $\Omega = 0$
c) $\sigma = 0$ and $\Omega = 0$
d) $\sigma < 0$ and $\Omega < 0$

Answer: c

107. Is the function y[n] = cos(x[n]) periodic or not?

a) True
b) False

Answer: a

108. If n tends to infinity, is the accumulator function an unstable one?

a) The function is marginally stable
b) The function is unstable
c) The function is stable
d) None of the mentioned

Answer: b

109. Comment on the causality of the following discrete time system: y[n] = x[-n]. a) Causal

b) Non causal
c) Both Casual and Non casual
d) None of the mentioned

Answer: b

110. Comment on the causality of the discrete time system: y[n] = x[n+3]. a) Causal

b) Non Causal
c) Anti Causal
d) None of the mentioned

Answer: c

111. Comment on the time invariance of the following discrete system: y[n] = x[2n+4]. a) Time invariant

b) Time variant
c) Both Time variant and Time invariant
d) None of the mentioned

Answer: b

112. How is a linear function described as?

a) Zero in Finite out
b) Zero in infinite out
c) Zero in zero out
d) Zero in Negative out

Answer: c

113. Is the system $y[n] = x^2[n-2]$ linear?

a) Yes
b) No

Answer: b

114. Is the above system, i.e $y[n] = x^2[n-2]$ time invariant?

a) Yes
b) No

Answer: a

115. The response of any discrete time system can be decomposed as ___

a) Total Response=Impulse+step
b) Total Response=Impulse+Ramp
c) Total Response=zero-output response
d) Total Response=zero-state response+zero-input response

Answer: d

116. Zero-state response of the system is _____

a) Response of the system when initial state of the system is zero
b) Response of the system due to input alone
c) Response of the system due to input alone when initial state of the system is zero
d) Response of the system due to input alone when initial state is neglected

Answer: c

117. Zero-input response is also known as ___

a) zero-state response
b) Natural response
c) state-input response
d) Forced response

Answer: b

118. Forced Response is solution of difference equation when _____ a) Input is zero

b) Input is given and initial conditions are zero
c) Natural Response
d) Input is given and initial conditions are non-zero

Answer: b

119. Forced response consists of _____

a) Homogenous solution and general solution
b) General solution alone
c) Homogenous solution and particular solution
d) Particular solution alone

Answer: c

120. Find the Nyquist rate and Nyquist interval of sin(2πt).

a) 2 Hz, 12 sec
b) 12 Hz, 12 sec
c) 12 Hz, 2 sec
d) 2 Hz, 2 sec

Answer: a

UNIT -V

121. Which of the following is the process of 'aliasing'?

a) Peaks overlapping
b) Phase overlapping
c) Amplitude overlapping
d) Spectral overlapping

Answer: d

122. The sampling frequency of a signal is F_s = 2000 samples per second. Find its Nyquist interval. a) 0.5 sec

b) 5 msec
c) 5 sec

d) 0.5 msec

Answer: b

123. Find the Laplace transform of δ(t).

a) 1
b) 0
c) ∞
d) 2

Answer: a

124. Find the Laplace transform of u(t) and its ROC.

a) 1/s, σ<0
b) 1/s, σ>0
c) 1/s−1, σ=0
d) 1/1−s, σ≤0

Answer: b

125. Find the ROC of $x(t) = e^{-2t} u(t) + e^{-3t} u(t)$.

a) σ>2
b) σ>3
c) σ>-3
d) σ>-2

Answer: d

126. The Laplace transform of the signal u (t+2) is _____ a) 1/s

b) −1/s
c) e−2s/s
d) −e−2s/s

Answer: a

127. The Laplace transform of the signal sin 5t is _ a) 5/s2+5

b) s/s2+5
c) 5/s2+25
d) s/s2+25

Answer: c

128. The ROC of $u(n) = 4^n$, for n<0; 2^n, for n≥0 is _____

a) 0<z<1
b) z<4
c) 2<z
d) 2<z<4

Answer: d

129. The value of the radius of convergence of $f(n) = 2^n$, $n<0$ is

a) $0<|z|<1$
b) $-2<|z|$
c) $|z|<2$
d) z-plane

Answer: c

130. The impulse response of a LTI system which is continuous is $H(t) = e^{-|t|}$. The system is

a) Causal and stable
b) Causal but not stable
c) Stable but not causal
d) Neither causal nor stable

Answer: c

131. For the system, $y(t) = u\{x(t)\}$ which of the following holds true?

a) System is Linear, time-invariant, causal and stable
b) System is time-invariant, causal and stable
c) System is causal and stable
d) System is stable

Answer: b

132. A series RC circuit excited by voltage V is _____

a) A memory less system
b) A causal system
c) A dynamic system
d) Static system

Answer: c

133. The steady state value of F (t), if it is known that $F(s) = bs(s+1)(s+a)$, where $a>0$, is

a) b/a
b) a/b
c) 1
d) Cannot be determined

Answer: a

134. Comment on the causality of the following discrete time system: y[n] = x[-n]. a) Causal

b) Non causal
c) Both Casual and Non casual
d) None of the mentioned

Answer: b

135. Comment on the causality of the discrete time system: y[n] = x[n+3]. a) Causal

b) Non Causal
c) Anti Causal
d) None of the mentioned

Answer: c

136. Comment on the time invariance of the following discrete system: y[n] = x[2n+4]. a) Time invariant

b) Time variant
c) Both Time variant and Time invariant
d) None of the mentioned

Answer: b

137. How is a linear function described as?

a) Zero in Finite out
b) Zero in infinite out
c) Zero in zero out
d) Zero in Negative out

Answer: c

138. The response of any discrete time system can be decomposed as ___

a) Total Response=Impulse+step
b) Total Response=Impulse+Ramp
c) Total Response=zero-output response
d) Total Response=zero-state response+zero-input response

Answer: d

139. The response of any discrete time system can be decomposed as ___

a) Total Response=Impulse+step
b) Total Response=Impulse+Ramp
c) Total Response=zero-output response
d) Total Response=zero-state response+zero-input response

Answer: d

140. Zero-input response is also known as ___

a) zero-state response
b) Natural response
c) state-input response
d) Forced response

Answer: b

141. Zero-input response is also known as ___

a) zero-state response
b) Natural response
c) state-input response
d) Forced response

Answer: b

142. Forced response consists of _____

a) Homogenous solution and general solution
b) General solution alone
c) Homogenous solution and particular solution
d) Particular solution alone

Answer: c

143. The period of the signal Z (t) = sin3t + cos 4t is _____

a) periodic without a definite period
b) periodic with a definite period
c) non- periodic over an interval
d) non-periodic throughout

Answer: b

144. The period of the signal Z (t) = sin3t + cos 4t is _____

a) periodic without a definite period
b) periodic with a definite period
c) non- periodic over an interval
d) non-periodic throughout

Answer: b

145. When do DTFT and ZT are equal?

a) When $\sigma = 0$
b) When $r = 1$
c) When $\sigma = 1$
d) When $r = 0$

Answer: b

146. Find the Z-transform of $\delta(n+3)$.

a) z
b) z^2
c) 1
d) z^3

Answer: d

147. Find the Z-transform of $a^n u(n); a>0$.

a) $z/z-a$
b) $z/z+a$
c) $1/1-az$
d) $1/1+az$

Answer: a

148. Find the Z-transform of u(-n).

a) $1/1-z$
b) $1/1+z$
c) $z/1-z$
d) $z/1+z$

Answer: a

149. The z-transform of u[n] is _____

a) $1/1-z-1, |Z|>1$
b) $1/1-z-1, |Z|<1$
c) $z/1-z-1, |Z|<1$
d) $z/1-z-1, |Z|>1$

Answer: a

150. Find the Z-transform of x(n) = u(-n-2).

a) $z^2/z-1$
b) $z^2/1-z$
c) $z^2/1+z$
d) $z^2/2-z$

Answer: b