T-1 Examination-September-2021 Principles of Digital Signal Processing

Note:
1. Total questions are 22.
2. Half mark will be awarded for each MCQ (18 MCQ for 9 marks).
3. One and half mark will be awarded for each short answer type question (4 Questions for 6 marks).
4. On your camera and mic during examination
5. Maximum Marks: 15
6. Maximum time: 1hr.

sunildatt.sharma@juitsolan.in Switch accounts

Your email address will be recorded when you submit this form

*Required

Which of the following is a multi channel signal *   1 point

○ Black and white picture

○ Coloured picture

○ ECG Signal

○ None of the above

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if x(n)=[1 2 3 4] the x(2n) is *   1 point

○ x=[2,4]

○ x=[1,3]

○ x=[4,1,2,3]

○ None of the above

x(n)δ(n-k) is equal to *   1 point

○ x(K)

○ X(n)

○ X(n-k)

○ all of the above

Odd part of the x(n)=u(n) is not a signum function *   1 point

○ False

○ True

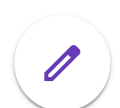Unit impulse δ(n) has the value one at n=0, and zero elsewhere. *   1 point

○ Flase

○ True

Z Transform of the signal x(n)=nu(n) is *   1 point

○ 1/z-1

○ (z^-1)/(1-z^-1)

○ Both of the above

○ None of the above

Write the steps involved to compute the convolution sum.

3 points

Your answer

Unit impulse δ(n)=u(n)–u(n+1) is *

1 point

○ Flase

○ True

Write the ways of DSP system representation.

3 points

Your answer

DSP systems does not have the feature of reconfigurability. *

1 point

○ True

○ False

A system y(n)=x(n) is *

1 point

○ Causal

○ time-variant

○ Both of the above

○ None of the above

What do you mean by the impulse response of the system? 3 points

Your answer

If x(n)=[1 , 1 , 1 , 1 , 1 , 1 , 1 , 1] and h[n]= [1 1] then y(n)=x(n)*h(n) is 1 point

○ [1,2,2,3,3,2,2,1]

○ [1,2,2,2,2,2,2,1]

○ [1,2,2,4,2,2,2,1]

○ [1,2,3,2,3,3,2,1]

The convolution between impulse response of a system h(n)=[1 2 3 4] and an arbitrary signal x(n)=[1 1 1] is * 1 point

○ [1, 3 ,6 ,8 7,4]

○ [1, 3 ,6 ,8 6,4]

○ [1, 3 ,6 ,9 7,4]

○ [2, 3 ,4 ,5 5,4]

A system y(n-1)=x(n) is * 1 point

○ Causal

○ Non- causal

○ time-variant

○ None of the above

The summation of the unit impulse for the range –infinity to 'n'   1 point
is............................ *

○ Unit step sequence

○ Unit sample sequence

○ both of the above

○ None of the above

Z Transform of the signal x(n)=u(n) is *   1 point

○ z/z-1

○ 1/(1-z^-1)

○ Both of the above

○ None of the above

ECG signal is a *   1 point

○ One dimensional signal

○ Multi-dimensional signal

○ Both of the above

○ None of the above

The fundamental period of the discrete signal x(n)=cos(3*n*pi/4) is *   1 point

○ 8/3

○ 8

○ both of the above

○ None

Write the steps involved to converts an analog signal to digital signal.   3 points

Your answer

Saving account is example of discrete time systems *   1 point

○ True

○ False

AC motor is an example of continuous time system. *   1 point

○ True

○ False

Submit   Clear form