DTSP TERM TEST 01 (2.09.2021)

* Required

QUESTIONS

3. What is DFT of x(n)={1,1,0,0} 1 point

- [0,0,1,1]
- [2,1-j0,1+j]
- [1,1-j0,1+j]
- [2,1-j1,1+j]

For G(S) F(S) = (kS+z))/(S+p), (z < p) the plot is 1 point

- a) One pole on the imaginary axis
- b) One zero on the right-hand side of the plane
- c) One pole and one zero on the left-hand side of plane
- d) 2 poles and 2 zeros on the left-hand side of plane

Clear selection

Which of the following substitution is done in Bilinear transformations? 1 point

- a) s = 2*[1+z-1]/1-z1]
- b) s = 2*[1+z-1]/1+]
- c) s = 2/T[1-z-1/1+z-1]
- d) None of the mentioned

Clear selection

If x(n) and X(k) are an N-point DFT pair, then X(k+N)=? 1 point

- X(k)
- X(k)
- X(N)
- X(n)

Clear selection

Compute circular convolution of x(n)={0,1,2,3} and h(n)={2,1,1,0} 1 point

- [7,9,11,3]
- [7,9,11,10]
- [7,9,11,9]
- [7,9,11,6]

Which of the following is the backward design equation for a low pass-to-high pass transformation? 1 point

- a) OS=OS/Ou
- b) S=Oc OHP/S
- S=Oc OLP/S
- d) OS=OTS/Ou

Clear selection

If X1(k) and X2(k) are the N-point DFTs of X1(n) and x2(n) respectively, then what is the N-point DFT of x(n)=ax1(n)+bx2(n)? 1 point

- X1(ak)+X2(bk)
- aX1(k)+bX2(k)
- eakX1(k)+ebkX2(k)
- None of the mentioned

Clear selection

What is the pass band edge frequency of an analog low pass normalized filter? 1 point

- 0 rad/sec
- b) 0.5 rad/sec
- c) 1 rad/sec
- d) 1.5 rad/sec

Clear selection

The computation of X(k) for a complex valued x(n) of N points requires _____ * 1 point

- a) 2N2 evaluations of trigonometric functions
- b) 4N2 real multiplications
- c) 4N(N-1) real additions
- d) All of the mentioned

Which of the following is a low pass-to-band stop transformation? 1 point

- a) s – s(Ou−0/)/s2+OuOl
- b) s – s(Ou+0/)/s2+OuOl
- c) s – s(Ou*0/)/s2+OuOl
- d) None of the mentioned

Clear selection

2^3 is called as Radix 2 FFT algorithm * 1 point

- TRUE
- FALSE

Compute 4 point dft of sequence x(n)=cos(nΠ/2) 1 point

- [0,2,0,2]
- [0,1,0,2]
- [0,3,0,2]
- [0,2,0,4]

Compute 4 point dft of sequence h(n)=2^n 1 point

- [15,-3+6j,-4,-3-6j]
- [15,-3+6j,-6,-3-6j]
- [15,-3+6j,-5,-3-6j]
- [15,-3+6j,-3,-3-6j]

Which of the following methods are used to convert analog filter into digital filter? 1 point

- a) Approximation of Derivatives
- b) Bilinear transformation
- c) Impulse invariance
- d) All of the mentioned

Clear selection

3. What is DFT of x(n)={1,1,0,0} 1 point

- [0,0,1,1]
- [2,1-j0,1+j]
- [1,1-j0,1+j]
- [2,1-j1,1+j]

Physically realizable and stable IIR filters cannot have ----- 1 point

- linear phase.
- Non Linear phase.
- linear frequency
- non linear frequency

Clear selection

Which of the following is a representation of system function? 1 point

- a) Normal system function
- b) Laplace transform
- c) Rational system function
- d) All of the mentioned

Clear selection

Q. The frequency warping is referred as1) lower frequencies in analog domain expanded in digital domain2) lower frequencies in digital domain expanded in analog domain3) non linear mapping4) compression of higher frequencies 1 point

- 1, 3 and 4 are correct
- 2 and 4 are correct
- 2 and 3 are correct
- All the four are correct

Clear selection

If x(n) and X(k) are an N-point DFT pair, then x(n+N)=x(n). 1 point

- FALSE
- TRUE

Clear selection

Which of the following methods are used to convert analog filter into digital filter? 1 point

- a) Approximation of Derivatives
- b) Bilinear transformation
- c) Impulse invariance
- d) All of the mentioned

Clear selection

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