Started on	Friday, 6 January 2023, 7:31 PM
State	Finished
Completed on	Friday, 6 January 2023, 7:53 PM
Time taken	22 mins 2 secs
Grade	**4.00** out of 10.00 (**40**%)

Question **1**

Correct

Mark 1.00 out of 1.00

The 4 point DFT of the signal x[n] = [1 0 0 0] is

Select one:

- a. [1 1 0 0]
- b. [1 0 0 0]
- c. [2 0 2 0]
- ⦿ d. [1 1 1 1] ✔

Your answer is correct.

The correct answer is: [1 1 1 1]

Question **2**

Incorrect

Mark 0.00 out of 1.00

2 signals x[n] and y[n] has lengths 3 and 4 respectively, the cross correlation output of these 2 sequences will have a length of

Select one:

- ⦿ a. 7 ✖
- b. None of the above
- c. 3
- d. 4

Your answer is incorrect.

The correct answer is: None of the above

Question **3**

Correct

Mark 1.00 out of 1.00

The impulse response of a system is given by h[n]= $\delta(n) - \delta(n-5)$. The difference equation representation of this system is

Select one:

- a. y[n] = x[n] + 5x[n-5]
- b. y[n]= x[n] - x[n+5]
- ⦿ c. y[n]=x[n] - x[n-5] ✔
- d. y[n] = x[n] - 5x[n+5]

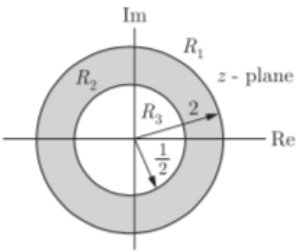Your answer is correct.

The correct answer is: y[n]=x[n] - x[n-5]

Consider three different signal

$$x_1[n] = \left[2^n - \left(\frac{1}{2}\right)^n\right]u[n]$$

$$x_2[n] = -2^n u[-n-1] + \frac{1}{2^n}u[-n-1]$$

$$x_3[n] = -2^n u[-n-1] - \frac{1}{2^n}u[n]$$

Following figure shows the three different region. Choose the correct for the ROC of signal

Select one:

a.

R_1	R_2	R_3
$x_3[n]$	$x_2[n]$	$x_1[n]$

b.

R_1	R_2	R_3
$x_1[n]$	$x_3[n]$	$x_2[n]$

c. ⦿

R_1	R_2	R_3
$x_2[n]$	$x_3[n]$	$x_1[n]$	✖

d.

R_1	R_2	R_3
$x_1[n]$	$x_2[n]$	$x_3[n]$

Your answer is incorrect.

The correct answer is:

R_1	R_2	R_3
$x_1[n]$	$x_3[n]$	$x_2[n]$

In which of the following methods, the output is considered as shown in the figure below
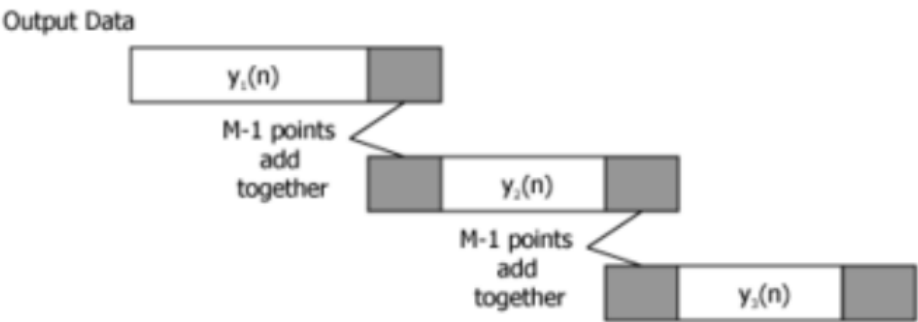
Select one:

○ a. Overlap Save Method

⦿ b. Overlap Add method ✔

○ c. None of the above

○ d. Both Overlap Add and Overlap Save method

Your answer is correct.

The correct answer is: Overlap Add method

Question 6

Incorrect

Mark 0.00 out of 1.00

In an N-point Sequence, if N=16, the total number of complex additions and multiplications (using Radix-2 FFT) involved are

Select one:

○ a. 64 and 32

● b. 24 and 12 ✖

○ c. 80 and 64

○ d. 64 and 80

Your answer is incorrect.

The correct answer is: 64 and 32

Question 7

Correct

Mark 1.00 out of 1.00

The Z-transform of a anticausal signal is $X(z) = \frac{12-21z}{3-7z+12z^2}$. the value of x(0) is

Select one:

○ a. 4

● b. 0 ✔

○ c. Does not exist

○ d. -7/4

Your answer is correct.

The correct answers are: 0, 4

Question 8

Incorrect

Mark 0.00 out of 2.00

Assertion (A) : The stability of the system is assured if the Region of Convergence (ROC) includes the unit circle in the z-plane.
Reason (R) : For a causal stable system all the poles should be outside the unit circle in the z-plane.

Select one:

○ a. A is False but R is true

● b. Both A and R are true and R is the correct explanation of A ✖

○ c. Both A and R are True and R is the correct Explanation of A

○ d. A is True but R is false

Your answer is incorrect.

The correct answer is: A is True but R is false