Unit 8 - Week 6

Course outline

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- Lecture 26 : FT Result Display - 2
- Lecture 27: Rotation Invariance Property
- Lecture 28: DCT and Walsh Transform
- Lecture 29: Handmard Transformation
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Detail Solution

Week 6 Assignment 6

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-09-11, 23:59 IST.

1) What is the circular convolution of the sequences of $x1$ $and x2$, where $x1(n) = x2(n) = \{2,3,1\}$? *1 point*

a. $\{1,2,\mathbf{3},2,1\}$
b. $\{7,7,11\}$
c. $\{10,13,13\}$
d. $\{1,8,\mathbf{1},11,1\}$

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c.

2) Fast Fourier Tranformcan be used to calculate *1 point*
1) DFT 2) Laplace Transform 3) Direct Z transform 4) In direct Z transform

a. 1, 2 and 3 are correct
b. 1 and 4 are correct
c. Only 1 is correct
d. None are correct

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c.

3) Which of the following statement(s) is(are) true with respect to Hadamard Transform? *1 point*
1) Forward and Inverse transforms are identical.
2) Hadamard kernels are separable and symmetric.

a. Statement 1 is only true.
b. Statement 2 is only true.
c. Statement 1 and 2 are both true.
d. None of the statement 1 or 2 is true.

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c.

4) Which of the following is (are) the property(ies) of two dimensional Discrete Fourier transform? *1 point*

a. Separability
b. Asymmetry
c. Aperiodicity and non-conjugate property
d. All of the above

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a.

5) Discrete cosine transforms (DCTs) express a function or a signal in terms of *1 point*

a. Sum of sine and cosine functions oscillating at different frequencies.
b. Sum of cosine functions oscillating at different frequencies
c. Sum of sine functions oscillating at different frequencies
d. All of these

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b.

6) Which of the two dimensional transform kernels are separable and symmetric? *1 point*

a. Discrete Cosine Transform (DCT)
b. Discrete Fourier Transform (DFT)
c. Discrete Walsh Transformation (DWT)
d. All of the above

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
d.

7) Which of the following statement is true? *1 point*

a. Only DFT is periodic functions and not Inverse DFT
b. Only Inverse DFT is periodic functions and not DFT
c. DFT and its Inverse are periodic functions
d. None of the above

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c.

8) If $x(n) = x_R(n) + j\, x_I(n)$is a complex sequence, whose Discrete Time Fourier Transform is can be given by$X(\omega) = X_R(\omega) + j\, X_I(\omega)$, then what is the value of $X_R(\omega)$? *1 point*

a. $\sum_{n=0}^{\infty}(x_R(n)\cos(\omega n) - x_I(n)\sin(\omega n))$
b. $\sum_{n=0}^{\infty}(x_R(n)\cos(\omega n) + x_I(n)\sin(\omega n))$
c. $\sum_{n=-\infty}^{\infty}(x_R(n)\cos(\omega n) + x_I(n)\sin(\omega n))$
d. None of these

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c.

9) What is the Discrete Fourier transform of the signal $x(n) = a^n u(n), |a| < 1$? *1 point*

a. $\frac{1}{1+ae^{-j\Omega}}$
b. $\frac{1}{1-ae^{j\Omega}}$
c. $\frac{1}{1-ae^{-j\Omega}}$
d. None of the above

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
d.

10) What is the time complexity of Fast Fourier Transform for an N - point Discrete Fourier Transform? *1 point*

a. $O(n^2)$
b. *O(nlogn)*
c. $O(\log^2 n)$
d. None of the above

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b.