Assignment 4

The due date for submitting this assignment has passed. Due on 2019-02-27, 23:59 IST.
As per our records you have not submitted this assignment.

1) How many operations are required in fast Fourier transform for N number of data points?
   a. N
   b. Nlog2N
   c. N^2
   d. None of these

   (a)  
   (b)  
   (c)  
   (d)

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

2) Which one is not a type of data acquisition error?
   a. Signal aliasing
   b. Bias error
   c. Quantization error
   d. None of these

   (a)  
   (b)  
   (c)  
   (d)

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

3) Signal aliasing can be prevented if sampling frequency \( f_s \geq f_{max} \)
   a. True
   b. False

   (a)  
   (b)
4) Due to slower sampling rate, the original signal appears to be a low frequency signal. The error caused is known as
a. Quantization error
b. Aliasing error
c. Leakage error
d. None of these

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

5) For a signal whose maximum frequency is unknown, to prevent aliasing error, low pass filter is to be used with cutoff frequency
a. Twice the sampling frequency
b. Half the sampling rate
c. Same as the sampling rate
d. None of these

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

6) Inverse fast Fourier transform is used for
a. Time to frequency domain transformation
b. Time to time domain transformation
c. Frequency to time domain transformation
d. Frequency to frequency domain transformation

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

7) During conversion of a bipolar signal of amplitude 5 V from analog to digital values, an ADC of amplitude resolution 1.25 V is used. What is the bit size required for a binary data recorder?
a. 1 bit
b. 2 bit
c. 3 bit
d. 4 bit
8) Digitization error is due to
   a. Inadequate sampling  
   b. Leakage  
   c. Lower value of amplitude resolution of ADC than analog signal  
   d. Higher value of amplitude resolution of ADC than analog signal

   (a)  
   (b)  
   (c)  
   (d)

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

9) Short-time Fourier transform is useful in determining
   a. Frequency content which is same throughout the signal  
   b. Frequency content that changes over time  
   c. Both a. and b.  
   d. None of these

   (a)  
   (b)  
   (c)  
   (d)

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

10) Which quantity among these has both magnitude and phase?
    a. Autopower spectrum  
    b. Cross-power spectrum  
    c. Coherence function  
    d. None of these

    (a)  
    (b)  
    (c)  
    (d)

   No, the answer is incorrect. 
   Score: 0 
   Accepted Answers: 
   (b)
Two independent signals which are not correlated has a coherence value of
a. 0
b. 0.5
c. 1
d. 2

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

12) The peak-to-peak analog voltage to ADC is 5 V. What is the amplitude resolution of an ADC of size 12 bits?

a. 1.22 V
b. 1.22 mV
c. 2.44 mV
d. Cannot be determined

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

13) The quefrency in Cepstrum analysis is equivalent to time

a. True
b. False

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

14) Which is true for Hilbert transform?

a. It converts signal from time domain to frequency domain
b. It converts signal from time domain to time domain
c. It converts the signal from frequency domain to time domain
d. None of these

No, the answer is incorrect.
Score: 0
15) When a signal contains many families of sidebands, which is the most suitable technique for analysis?

   a. Hilbert transform  
   b. Cepstrum analysis  
   c. Fast Fourier transform  
   d. None of these

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