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Courses » Machinery Fault Diagnosis And Signal Processing

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Unit 7 - Week 5

Register for
Certification exam

Course outline

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portal

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Assignment 5

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

Due on 2019-03-06, 23:59 IST

1) 1 point
A seismic signal of dynamic range of 1 V is sampled at 50 samples/s using 8-bit A/D convert what would be the bit rate?

- a. 400 bit/s
- b. 500 bit/s
- c. 80 bit/s
- d. 50 bit/s

- a.
- b.
- c.
- d.

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

a.

2) 1 point
A seismic signal of dynamic range of 1 V is sampled at 50 samples/s using 8-bit A/D convert find out the amplitude resolution.

- a. ≈ 0.2
- b. ≈ 0.125
- c. ≈ 0.004
- d. ≈ 0.008

- a.
- b.
- c.
- d.

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

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Week 12

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Solution

Signal heterodyning uses _____ phenomenon to determine unknown frequency content of tl signal.

- a. Modulation
- b. Beating
- c. Demodulation
- d. Interference

- a.
- b.
- c.
- d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

4)

1 point

Select the MATLAB command, which is used to obtain envelope of the time signal

- a. fft
- b. hilbert
- c. cceps
- d. env

- a.
- b.
- c.
- d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

5)

1 point

Which of the MATLAB command is used to obtain n point fast Fourier transform of a time s
x

- a. fftn(x)
- b. fft(x,n)
- c. fft(n,x)
- d. fftx(n)

- a.
- b.
- c.
- d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

6)

1 point

With 512 data points, how many times fast Fourier transform would be faster than discrete Fourier transform

- a. About 56 times
- b. About 30 times
- c. About 65 times
- d. About 100 times

- a.
- b.
- c.
- d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

7) Determine the Nyquist rate for sampling of a continuous signal given by $x(t) = \sin(200\pi t) + \cos(100\pi t) + \sin(400\pi t)$

1 point

- a. 200 Hz
- b. 100 Hz
- c. 400 Hz
- d. 700 Hz

- a.
- b.
- c.
- d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

c.

8)

1 point

A discrete time signal $x(n) = 12.8 \sin(\pi/10)n$ is quantized with a resolution of 0.1. How many are required for A/D conversion?

- a. 4 bits
- b. 8 bits
- c. 12 bits
- d. 16 bits

- a.
- b.
- c.
- d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

9) Signal heterodyning is used to find frequencies in very high frequency signal

1 point

- a. True
- b. False

- a.
- b.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

10) Select the types of stationary signals

1 point

- a. Sine wave
- b. Square wave
- c. Chirp signal
- d. All of the above

- a.
- b.
- c.
- d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

b.

11) The MATLAB command for cepstrum analysis is

1 point

- a. cep
- b. cceps
- c. ccep
- d. cepstrum

- a.
- b.
- c.
- d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

12)

1 point

The fast Fourier transform technique can be applied for stationary and non-stationary signals

- a. True
- b. False

- a.
- b.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

13) Following are the time-frequency analysis techniques

1 point

- a. Fast Fourier transform
- b. Short-time Fourier transform
- c. Wavelet transform
- d. All of the above

- a.
- b.
- c.
- d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

- b.
- c.

14)

1 point

A device provides peak vibration of 30 m/s^2 at 1000 rad/s , what would be the peak velocity

- a. 30 m/s
- b. 30 mm/s
- c. 3 m/s
- d. 3 mm/s

- a.
- b.
- c.
- d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

- b.

15)

1 point

With 8-bit data acquisition system and for maximum input analog voltage range of 5 V , determine the gain of a signal conditioning analog amplifier so that a signal of 1 micro-volt amplitude can be acquired

- a. 2441.4
- b. 39062.5
- c. 19531.25
- d. 1220.7

- a.
- b.
- c.
- d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

- c.

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