Search

Activity
Chat
Teams
Assignments
Calendar
Calls
Files
...
Apps
Help

Wireless communication (Midterm exam) (Wireless lecture Dr.Ehab)

Close

1

An example of analog data (choose two)
(1/1 Point)

- [x] audio ✓
- [ ] text
- [ ] numbers
- [x] video ✓

2

The reduction of signal strength over propagation distance is called
(1/1 Point)

- ( ) amplification
- ( ) distortion
- (•) attenuation ✓
- ( ) interference



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3

Suppose that the spectrum of a channel is between 3MHz and 4MHz. Suppose the SNR_dB= 24dB. Then the channel capacity is
(1/1 Point)

- 2.22Mbps
- 3.33Mbps
- 5.55Mbps
- 6.66Mbps ✓

4

Which signal has a finite number of levels?
(1/1 Point)

- analog
- digital ✓
- both analog and digital
- none of the mentioned

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5

The frequency of a signal is (choose two)
(1/1 Point)

- [ ] the number of sinusoidal components in the signal
- [x] the number of cycles in the second ✓
- [ ] maximum strength of the signal
- [x] measured by Hertz (Hz) ✓
- [ ] the time duration duration of one cycle

6

The signal that satisfies s(t+T) = s(t) may be
(1/1 Point)

- ( ) analog
- ( ) digital
- (•) analog or digital ✓
- ( ) none of the mentioned

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**7**

Suppose that the spectrum of a channel is between 3MHz and 4MHz. By ignoring the effect of noise and using 4 levels for a digital signal, the channel capacity is
(1/1 Point)

- 1Mbps
- 2Mbps
- 4Mbps ✓
- 8Mbps

**8**

The absolute bandwidth of a signal is
(1/1 Point)

- the fundamental frequency
- the sum of all frequencies of its components
- the width of its spectrum ✓
- band of frequencies that most of energy is contained in

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9

The period of a signal is
(1/1 Point)

- the maximum frequency in the signal
- the maximum strength of the signal
- the time duration of one cycle ✓
- the time duration until the first peak

10

A periodic signal has frequency 10 Hz. Then its period is
(1/1 Point)

- 0.1 seconds ✓
- 0.5 seconds
- 1 second
- 10 seconds

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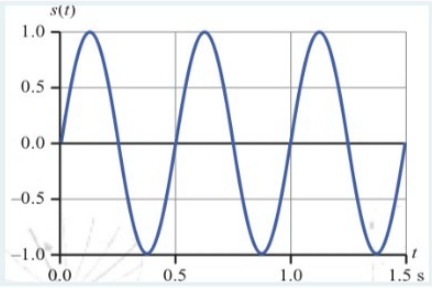
**11**

The signal in the figure has frequency
(1/1 Point)




- 1Hz
- 2Hz ✓
- 4Hz
- 6Hz

**12**

An example of digital data
(1/1 Point)

- audio
- text ✓
- video
- temperature

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13

Consider a signal that has two (sin) components with frequencies 2Hz and 3Hz. Then the frequency of the signal is
(1/1 Point)

- 4Hz
- 3Hz
- 2Hz
- 1Hz ✓

14

The signal described by s(t+T) = s(t) is called
(1/1 Point)

- sinusoidal
- multi-peak
- periodic ✓
- aperiodic

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**15**

Using an analog signal to send digital data is called
(1/1 Point)

- (•) modulation ✓
- ( ) multiplexing
- ( ) encoding

**16**

The problem of multi-path fading is caused by
(1/1 Point)

- (•) reflection ✓
- ( ) refraction
- ( ) diffraction
- ( ) noise

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17

To allow detection and correction of errors, we need
(1/1 Point)

- (•) extra bits are transmitted along with data ✓
- ( ) to change the communication channel
- ( ) to reduce the rate of transmission
- ( ) none of the mentioned

18

The device used to transmit analog data on a digital signal is called
(1/1 Point)

- ( ) telephone
- ( ) modem
- (•) codec ✓
- ( ) digital transceiver

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digital transceiver

19

One of the following is true for Line-of-Sight communication.
(1/1 Point)

- Necessary for wireless communication
- best for wireless communication ✓
- not important for wireless communication

20

The device used to transmit digital data using an analog signal is called
(1/1 Point)

- telephone
- modem ✓
- codec
- digital transceiver

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21

The channel capacity is
(1/1 Point)

- The average data rate that can be transmitted on the channel
- The maximum data rate that can be transmitted on the channel ✓
- The bandwidth of the channel
- the bandwidth of signals transmitted on the channel

22

The electromagnetic waves are periodic in
(1/1 Point)

- time
- distance
- both time and distance ✓
- none of the mentioned

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**23**

Consider the signal s(t)= A sin(4pi t)+ B sin(6pi t). Then its fundamental frequency is
(1/1 Point)

- (●) 1.0Hz ✓
- ( ) 2.0Hz
- ( ) 3.0Hz
- ( ) 4.0Hz

**24**

A periodic signal has period T=2 seconds. Then its frequency is
(1/1 Point)

- ( ) 2.0Hz
- ( ) 1.0Hz
- (●) 0.5Hz ✓
- ( ) 0.25Hz

**25**

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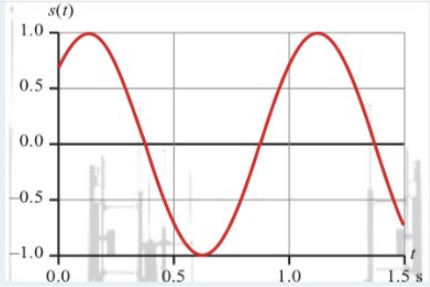
25

The signal in the figure can be written as:
(1/1 Point)




- s(t)=1.0sin(2pi t)
- s(t)=0.5sin(2pi t + pi/4)
- s(t)=1.0sin(2pi t + pi/4) ✓
- s(t)=1.0sin(4pi t + pi/2)
- s(t)=1.0sin(2pi t + pi/2)

26

Consider the signal s(t)= A sin(2pi t)+ B sin(4pi t). Then its fundamental frequency is
(1/1 Point)

- 1.0Hz ✓
- 2.0Hz
- 3.0Hz

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27

The aperiodic signal (choose two )
(1/1 Point)

- [ ] repeats its pattern over time
- [x] does not repeat its patten over time ✓
- [ ] may be analog only
- [ ] may be digital only
- [x] may be analog or digital ✓

28

Which signal varies as a continuous function of time
(1/1 Point)

- (•) analog ✓
- ( ) digital
- ( ) both analog and digital
- ( ) none of the mentioned

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29

The range of frequencies that the signal contains is called
(1/1 Point)

- fundamental frequency
- spectrum ✓
- bandwidth
- effective bandwidth

30

The amplitude of a periodic signal is
(1/1 Point)

- the maximum strength of the signal ✓
- the minimum strength of the signal
- the maximum component frequency in the signal
- the time duration of the signal