تراسل البيانات
9:11
الإثنين 28/6/2021
أ.د. رضا رجب

Faculty of Computers & Information, Assiut University
2nd Level
Final Exam
Duration: 2 hours

1

* الإسم الرباعي (بالعربي فقط)

ماريا سامح الفونس قزمان

2

* رقم الجلوس

1620195209

3

المستوي *

- الاول
- الثاني
- الثالث
- رابعة 2013
- رابعة 2014
- رابعة 2015
- رابعة 2016
- رابعة 2017

4

البرنامج *

- عام
- بايو
- هندسة

5

رقم المعمل *

- ج.
- د.

- اب
- اد
- اهـ
- أ٢
- ب٢
- ج٢
- د٢
- هـ٢
- أ٣
- ب٣
- ج٣
- د٣
- هـ٣
- أ٤
- ب٤

6

* رقم الكمبيوتر

19

7

* الكود (قد تمت مراجعة بيانات الطالب ورقم الجلوس)

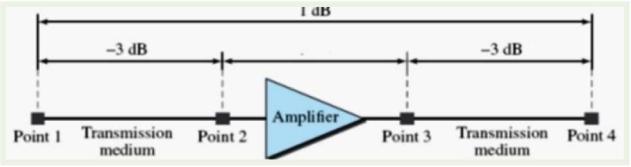
GMGx

8

In PCM, if a lowpass analog signal has a bandwidth of 4 kHz, then it needs a minimum sampling frequency of
(2.5 Points)

- 4 kHz
- 8 kHz
- 6 kHz

9



Between point 1 and point 4, the signal is amplified by 1 dB and if the signal between points 1 and 2 and between 3 and 4 are attenuated by -3 dB and -3 dB, then, the amplifier gain in dB is
(2.5 Points)

- 5 dB
- -5 dB
- 7 dB

10

A network is
(2.5 Points)

- the interconnection of a set of devices capable of communication.
- the interconnection of only two devices capable of communication.
- the interconnection of only three devices capable of communication.

11

The maximum bit rate for a channel of bandwidth of 100 kHz is
(2.5 Points)

- 100 kbps
- 200 kbps
- 400 kbps

12

Full-duplex data flow means
(2.5 Points)

- only one of the two devices/stations on a link can transmit.
- both devices/stations on a link can transmit and receive simultaneously.
- each device/station on a link can both transmit and receive, but not at the same time.

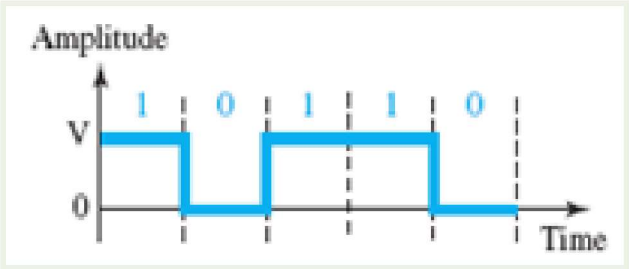
13

A single sine wave is fully determined by
(2.5 Points)

- amplitude.
- amplitude and frequency.

amplitude, frequency and phase.

14



The signal in the opposite figure is generated by
(2.5 Points)

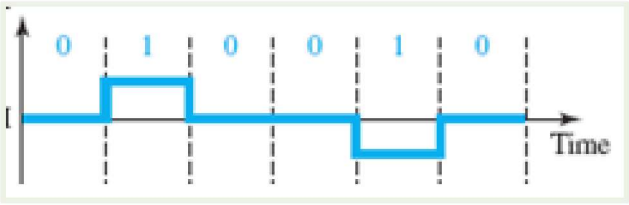
- unipolar NRZ line coding scheme.
- bipolar RZ line coding scheme.
- . unipolar RZ line coding scheme.

15

Signal distortion means that the signal changes its
(2.5 Points)

- form or shapes.
- phase.
- delay.

16



The signal in the opposite figure is generated by
(2.5 Points)

- unipolar NRZ line coding scheme.
- AMI line coding scheme.
- unipolar RZ line coding scheme.

17

Performance of a network is measured by
(2.5 Points)

- transit and response time.
- transit, response and delay times and throughput
- throughput and delay.

18

Data communication is the exchange of…….. between two persons via some form of transmission media such as fiber-optic cable.
(2.5 Points)

- data
- text and images
- numbers and audio

19

Line coding is the process of
(2.5 Points)

- converting digital signal to digital data.
- converting digital data to digital signal.
- converting analog signal to digital data.

20

A periodic signal is decomposed into five sine waves with frequencies of 100, 300, 500, 700, and 900 Hz, then, the bandwidth is
(2.5 Points)

- 700 Hz
- 500 Hz
- 800 Hz

21

We need to send 265 kbps over a noiseless channel with a bandwidth of 20 kHz., then, we need the following number of signal levels
(2.5 Points)

- 98.7 levels
- 128 levels
- 64 levels

22

In a telephone line the bandwidth is 3 kHz and the SNR= 3162, the channel capacity is
(2.5 Points)

- 34,860 baud
- 34,860 bps
- 32,860 bps

23

In data communications, our goal is to
(2.5 Points)

- increase data element rate and decrease signal element rate.
- decrease data element rate and decrease signal element rate.
- decrease data element rate and increase signal element rate.

24

For a good performance of a network we need
(2.5 Points)

- more throughput and less delay.
- less throughput and less delay.
- less throughput and more delay.

25

Analog data is the one that has
(2.5 Points)

- infinite number of levels.
- finite number of levels.
- discreet frequency spectrum.

26

The telecommunication technology includes
(2.5 Points)

- Telephony and Telegraphy
- Radio set and Television.
- All in a and. b

27

In Star topology of a network of N devices, we need number of physical links of
(2.5 Points)

- N.
- N/2.
- N in addition to a hub.

28

A signal with constant +5 volt can be represented by a single sine wave having (2.5 Points)

- amplitude of 5, 0 frequency and arbitrary phase.
- amplitude of 5, 0 frequency, and π/2 phase.
- amplitude of 5, 0 frequency, and 0 phase.

29

A radio sine wave with frequency 4×10^14 Hz has a wavelength equal to (2.5 Points)

- 0.75×10^-6 m.
- 0.75×10^-6 m/sec.
- 2×10^-6 m.

30

A data communications system consists of the following components (2.5 Points)

- a sender and a receiver.
- messages and protocol.
- All in a and b in addition to the transmission medium.

31

In noiseless channel the maximum bit rate (bps) that can be transmitted on this channel with bandwidth B is given by
(2.5 Points)

- [x] 2×B×Log2(L)
- [ ] B×Log2(L)
- [ ] 4×B×Log2(L)

32

The term data refers to
(2.5 Points)

- [ ] text, images and video.
- [x] information presented in whatever form is agreed upon by the parties creating and using the data.
- [ ] Numbers and Audio.

33

The bit rate (bps), called the channel capacity, for the noisy channel with B bandwidth and SNR is given by
(2.5 Points)

- [ ] B×Log_2 (1+2×SNR)
- [ ] 2B×Log_2 (1+2×SNR)
- [x] B×Log_2 (1+SNR)

34

If a composite signal is non-periodic, the decomposition gives a series of sinusoids with
(2.5 Points)

- (●) continuous frequencies
- ( ) discrete frequencies
- ( ) discrete phases

35

In Bus topology of a network of N devices, we need number of physical links of
(2.5 Points)

- ( ) N drop lines.
- (●) N drop lines and a long cable acting as a backbone.
- ( ) long cable acting as a backbone.

36

A physical Layer is responsible for
(2.5 Points)

- (●) converting digital data into signal.
- ( ) converting signal into digital data.
- ( ) both converting digital data into signal and signal into digital data.

37

A digital signal has nine levels, the number of bits needed per level is
(2.5 Points)

- (●) 4 bits
- ( ) 3 bits
- ( ) 5 bits

38

In Mesh topology of a network of N devices, we need a number of physical links of
(2.5 Points)

- (●) . N(N-1)/2
- ( ) N^2/2.
- ( ) N

39

A signal is carrying data in which one data element is encoded as two signal element. If the bit ate is 100 kbps and c is between 0 and 1, the average value of the baud rate is
(2.5 Points)

- ( ) 200 kbaud
- (●) 100 kbaud
- ( ) 50 kbaud

40

Bandwidth of a composite signal is
(2.5 Points)

- the difference between the highest and lowest frequencies contained in the signal.
- the highest frequency contained in the signal.
- twice the highest frequency contained in the signal.

41

A sine wave with amplitude of 10 and frequency of 200 Hz. shows in frequency domain
(2.5 Points)

- two lines with amplitude 10, one at frequency 200 Hz and the other is at 400 Hz.
- one line with amplitude 10 at frequency 400 Hz.
- one line with amplitude 10 at frequency 200 Hz.

42

Reliability of an network is measured by
(2.5 Points)

- the frequency of failure.
- the time it takes to recover from failure.
- both the frequency of failure and the time it takes to recover from failure.

43

A digitized voice channel is made by digitizing a 4-kHz bandwidth analog voice signal, the sampling frequency is 8 kHz and each sample requires 8 bits. Thus, the bit rate is
(2.5 Points)

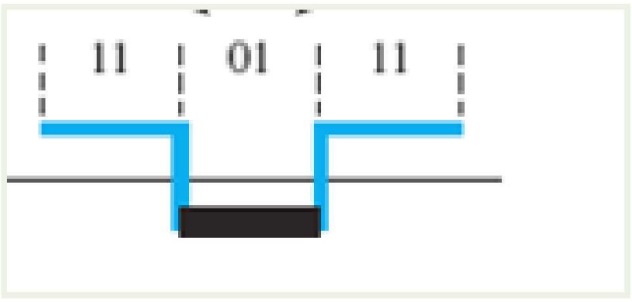
- (●) 32 Kbps
- ( ) 64 kbps
- ( ) 128 kbps

44

If a composite signal is periodic, the decomposition gives a series of sinusoids with
(2.5 Points)

- ( ) continuous frequencies.
- (●) discrete frequencies
- ( ) discrete phases

45



In the opposite signal due to line coding, r is equal to
(2.5 Points)

- (●) 2

- 4/3
- 1/2

46

A periodic signal is the one that repeats the same pattern every measurable ..... called a period.
(2.5 Points)

- time
- amplitude
- frequency

47

The power of a signal is 10 mW and the power of the noise is 1µW; then, the values of SNR and SNRdB, respectively, are
(2.5 Points)

- SNR=10000 and SNRdB=40 dB.
- SNR=10000 and SNRdB=80 dB.
- SNR=10000 and SNRdB=-40 dB.