Networks MIDTERM
(Chapter 1-14 9 excluded)

1) The power of a signal is 50 Milli-Watts and the power of the noise is 5 Micro Watts; SNR_{dB} is equal to:

a. 20

b. 10

c. 30

d. 40

e. 50

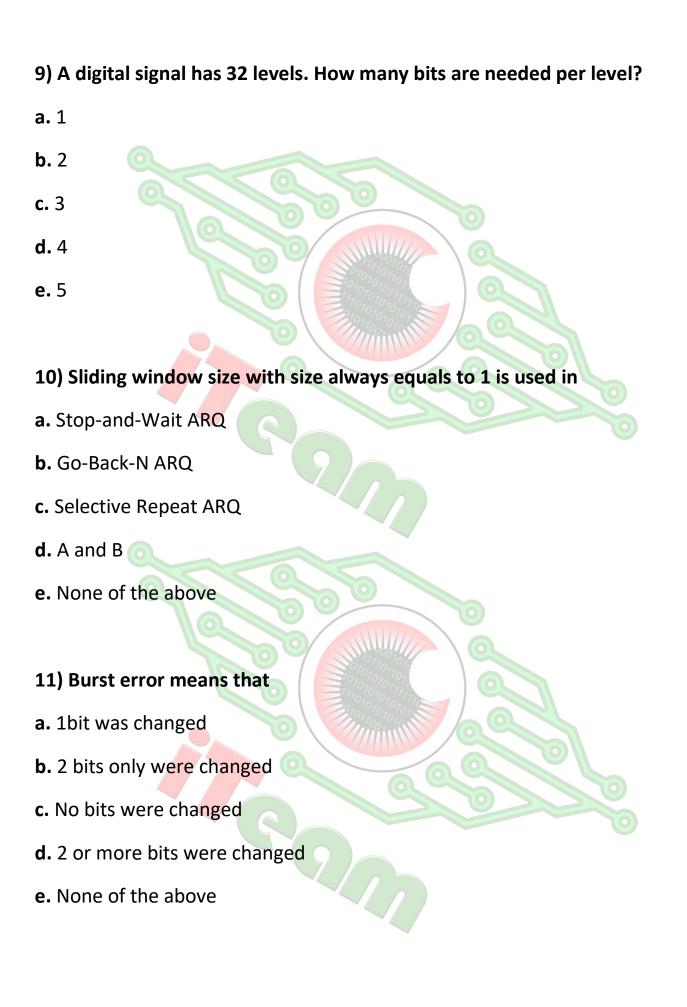**2) Assume that, in a stop-and-Wait ARQ system, the bandwidth of the line is 2 Mbps, and each 1 bit takes 20 ms to make around trip. What is the bandwidth-delay product?**

a. 40,000 bits

b. 16,000 bits

c. 25,000 bits

d. 35,000 bits

e. 15,000 bits

3) In Datawords and codewords in block coding, if K=3 and r=1. Then we have

a. 8 datawords

b. 8 Codewords

c. 16 datawords

d. 15 Codewords

e. 3 datawords

4) Network addressing performed on the level of Network layer is:

a. Hop to Hop addressing

b. End to End addressing

c. Uses routers functions

d. Uses switches function

e. B and C

5) When Baseband transmission using a dedicated medium, the reason of which the input signal frequency is greater than that for the output signal is

a. The limited range of the input signal

b. The limited range of the output signal

c. The limited range of the Channel bandwidth and the input signal

d. The limited range of the Channel bandwidth

e. None of the Above

6) In the wireless electromagnetic waves bands, the following band is used for line of sight propagation

a. VLF

b. LF

c. HF

d. UHF

e. All of the above

7) In Analog transmission of digital data, the baud rate is:

a. Is greater than the bit rate

b. Is greater than or equal the bit rate

c. Is less than or equal the bit rate

d. Is less than the bit rate

e. Has no relation with the bit rate

8) Which of the following is correct regarding Synchronous transmission

a. It is slower than synchronous

b. It harder for the receiver to group the received bits

c. There exists less overhead when transmitting the flow of bits when compared with asynchronous transmission

d. There exists more overhead when transmitting the flow of bits when compared with asynchronous transmission

e. B and C

9) A digital signal has 32 levels. How many bits are needed per level?

a. 1

b. 2

c. 3

d. 4

e. 5

10) Sliding window size with size always equals to 1 is used in

a. Stop-and-Wait ARQ

b. Go-Back-N ARQ

c. Selective Repeat ARQ

d. A and B

e. None of the above

11) Burst error means that

a. 1bit was changed

b. 2 bits only were changed

c. No bits were changed

d. 2 or more bits were changed

e. None of the above

12) If a network is transmitting data with a throughput of 3Mbps and has a bandwidth of 12 Mbps, then the utilization of the network is

a. 1/4

b. 4

c. 1/2

d. 2

e. 1/12

13) A virtual circuit network is

a. A virtual packet switching network

b. Combines both circuit switched and packet switched networks

c. Can be circuit switching or a packet switching network exclusively

d. Separates circuit switching from packet switching

e. Not related at all to circuit switching or packet switching

14) The destination address in the header of a packet in a datagram network

a. Changes during the journey of the packet

b. Changes depending on the different hops of the journey

c. May change may not depending on the routers decision

d. It is impossible to know if it will change

e. None of the above

15) The number and colors of pins used in UTP connectors RJ-45 are

a. 10 same colors

b. 8 same colors

c. 7 different colors

d. 7 same colors

e. None of the above

16) If the number of signal elements is equal to 3 and the number data elements is equal to 6, then r=

a. 0.5

b. 0.3

c. 3

d. 6

e. 2

17) Repeaters in star topology are important to:

a. Reduce the noise in the network

b. Regenerate the signal

c. Reduce the noise and Regenerate the signal

d. Repeat the address of the next hop

e. None of the above

18) In digital transmission, the baud rate is:

a. The number of zeros in the signal

b. The number of ones in the signal

c. The number of signal elements per bit

d. The number of signal elements per second

e. The number of transmitted bits per second

19) Which of the following is true about the sampling process when converting an analog signal to a digital one:

a. Only the digital signal is sampled

b. Only the analog signal is sampled

c. Both of the Analog and the digital signals are sampled

d. No sampling takes place

e. None of the above

20) In the process of error detection in block coding, the checker at the receiver may

a. Discard the received dataword always

b. Extract the received dataword always

c. Discard the received dataword if an error takes place

d. Extract the received datdword if an error takes place

e. None of the above

21) In MAC frame, if the payload length equals to 48 then the frame length equals to

a. 64

b. 65

c. 66

d. 67

e. 68

22) In Multiplexing, FDM is NOT used in

a. Telephone systems transmission

b. Computer systems transmission

c. TV systems

d. A and C

e. None of the above

23) Which of the following types of switching types requires resources reservation

a. Packet switching

b. Circuit switching

c. Some types of circuit switching but not all

d. A and C

e. None of the above

24) Which of the following is correct regarding the UTP cables

a. CAT3 can have lower data rate than CAT2

b. CAT3 can have higher data rate than CAT2

c. No noise can happen when using UTPs

d. Both CAT2 and CAT3 cannot be used in LANs

e. B and D

25) Flow control in data link layer refers to

a. Controlling the amount of data that the sender can send

b. The amount of the data that the channel can transmit

c. The flow of bits and how they are modulated

d. The control of errors on the flow of transmitted bits

e. C and D

Suggested Answers:

1	D	6	D	11	D	16	E	21	A
2	A	7	C	12	A	17	E	22	B
3	A	8	E	13	B	18	D	23	B
4	E	9	E	14	E	19	B	24	B
5	D	10	A	15	E	20	C	25	E