How many characters per sec (7 bits + 1 parity) can be transmitted over a 2400 bps line if the transfer is synchronous (1 start and 1 stop bit)?

A 300

B 240

C 250

D 275

Consider a 50 kbps satellite channel with a 500 milliseconds round trip propagation delay. If the sender wants to transmit 1000 bit frames, how much time will it take for the receiver to receive the frame?

A 250 milliseconds

B 20 milliseconds

C 520 milliseconds

D 270 milliseconds

What is the maximum number of characters (7 bits + parity) that can be transmitted in a second on a 19.2 Kbps line. This asynchronous transmission requires 1 start bit and 1 stop bit.

A 192

B 240

C 1920

D 1966

One SAN switch has 24 ports. All 24 supports 8 Gbps Fiber Channel technology. What is the aggregate bandwidth of that SAN switch?

A 96 Gbps

B 192 Mbps

C 512 Gbps

D 192 Gbps

How many bytes of data can be sent in 15 seconds over a serial link with baud rate of 9600 in asynchronous mode with odd parity and two stop bits in the frame?

A 10,000 bytes

B 12,000 bytes

C 15,000 bytes

D 27,000 bytes

Let us consider a statistical time division multiplexing of packets. The number of sources is 10. In a time unit, a source transmits a packet of 1000 bits. The number of sources sending data for the first 20 time units is 6, 9, 3, 7, 2, 2, 2, 3, 4, 6, 1, 10, 7, 5, 8, 3, 6, 2, 9, 5 respectively. The output capacity of multiplexer is 5000 bits per time unit. Then the average number of backlogged of packets per time unit during the given period is

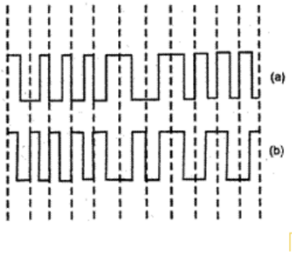
A 5

B 4.45

C 3.45

D 0

In the waveform (a) given below, a bit stream is encoded by Manchester encoding scheme. The same bit stream is encoded in a different coding scheme in wave form (b). The bit stream and the coding scheme are



A 1000010111 and Differential Manchester respectively

B 0111101000 and Differential Manchester respectively

C 1000010111 and Integral Manchester respectively

D 0111101000 and Integral Manchester respectively

A serial transmission T1 uses 8 information bits, 2 start bits, 1 stop bit and 1 parity bit for each character. A synchronous transmission T2 uses 3 eight-bit sync characters followed by 30 eight-bit information characters. If the bit rate is 1200 bits/second in both cases, what are the transfer rates of T1 and T2?

A. 100 characters/sec, 153 characters/sec

B. 80 characters/sec, 136 characters/sec

C. 100 characters/sec, 136 characters/sec

D. 80 characters/sec, 153 characters/sec

How many 8-bit characters can be transmitted per second over a 9600 baud serial communication link using asynchronous mode of transmission with one start bit, eight data bits, two stop bits, and one parity bit?

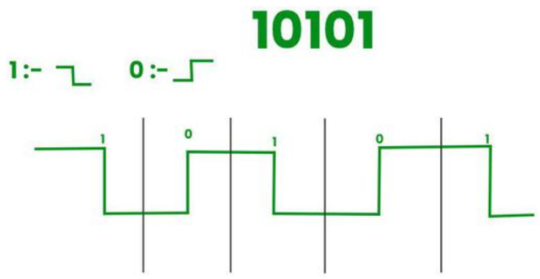
A. 600

B. 800

C. 876

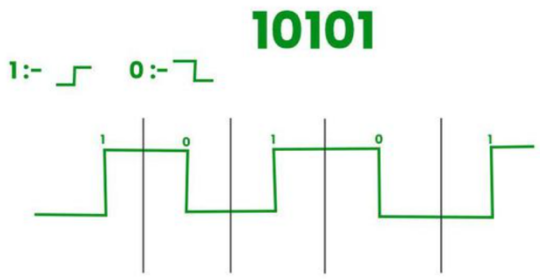
D. 1200

1. Dr. Thomas: In this manchester encoding 0 is represented as low-to-high and 1 is represented as high-to-low.



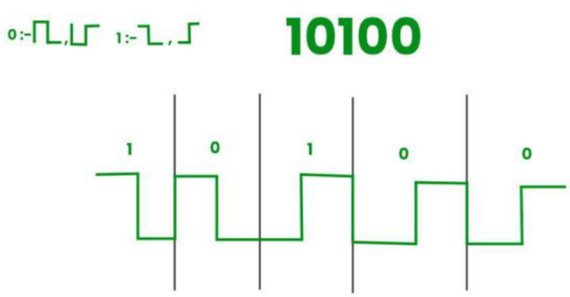
Dr. Thomas Manchester Encoding

2. IEEE802.3: In this manchester encoding, 0 is represented as high-to-low and 1 is represented as low-to-high.



Differential Manchester Encoding:

- It is also known as the Biphase mark code, etc.
- The presence and absence of the transition indicate the value.
- In Differential Manchester Encoding 0 should contain an edge but 1 should not contain any edge it should be continuous.



Differential Manchester Encoding

Application on Differential Manchester Encoding:

- For every bit, there is a transition guaranteed
- Used in 802.5 with Twisted Pair.

Difference Between Manchester and Differential Manchester Encoding:

S. No	Manchester Encoding	Differential Manchester Encoding
1.	Manchester encoding s a synchronous clock-encoding technique used by the physical layer to encode the clock and data of a synchronous bit stream.	Differential Manchester encoding is a line code in which data and clock signals are combined to form a single 2-level self-synchronizing data stream
2.	Low to High represents 1 and High to Low represents 0.	No transition at the start of a bit period represents 1 and transition at the start of a bit period represents 0.
3.	It provides better signal synchronization.	It provides less signal synchronization as compared to manchester encoding.
4.	Signal rate is the drawback of manchester encoding as there is always one transition at the middle of the bit and maybe one transition at the end of each bit.	It maps at least one transition per bit time and possibly two bits. Its modulation or signal rate is two times that of NRZ. Hence it requires more bandwidth.
5.	Used by IEEE 802.3 specification for Ethernet LAN	Used by IEEE 802.5 specification for Token Ring LAN