Mid Sem - CS 303 - 29/09/21 (Wed) - 4 PM to 5 PM-Btech(Regular)

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* Required

CS303 Mid Term Exam

Total Questions - 40
Time of the Exam: 4.00 pm to 5.00 pm

Instructions:
1. Attempt all questions.
2. You need to compulsory submit the test/exam before the due/end time. Your response will not be recorded, If you don't submit the test.
3. There is no negative marking

A CSMA/CD network has bandwidth of 20×10^6 bits per second. The time taken by the signal to propagate from one computer to another is 40 microseconds. The minimum size of a frame in the network is _____ bytes. *

- (●) 200
- ( ) 250
- ( ) 450
- ( ) 400

Which of the following is true? *

○ From hop to hop, physical address and port will change but logical address will not change

○ From hop to hop, physical and logical addresses will change

◉ None of the above

○ From hop to hop, physical address will not change but logical address will change

VLAN can group stations based on *

☑ Physical Address

☑ Port Number

☑ Logical Address

☑ Broadcasting Address

Store and forward technique is used in which of the following switching technique/(s)? *

○ Packet Switching

◉ Message Switching

○ Both of the above

○ None of the above

Select appropriate true (T) or false (F). *

- Dialogue control is done by presentation layer
- Synchronization of data is done by application layer
- Port addressing is done by transport layer
- Physical addressing is done by physical layer

○ TTFT

◉ FFTF

○ FTFT

○ TFTT

In fully connected mesh topology, if there are 10 hosts then how many links will be there in that network? *

○ 55

○ 100

◉ 45

○ 90

The signals whose frequency is greater than 30 MHz use _____ for propagation. *

☐ Ground

☐ Sky

☑ Line of sight

☐ None of the above

The LLC layer receives the IP packet from internet layer and formats it into - *

○ Packets

○ Bytes

● Frames

○ Messages

What is the hamming distance for d (10101 , 10000) ? *

○ 1

○ 3

● 2

○ 4

In wireless distribution system *

☐ None of the above

☐ There is no repeater in wireless network

☑ Multiple APs are inter-connected with each other

☐ There is no access point

ATM uses *

☐ asynchronous frequency division multiplexing

☑ asynchronous time division multiplexing

☐ asynchronous space division multiplexing

☐ asynchronous amplitude division multiplexing

Which of the following is a type of HDLC frame *

☐ Numbered Frames

☑ Information Frame

☑ Unnumbered Frames

☑ Supervisory Frame

Consider the following statements in context to packet switching: i) All packets of a single message take the same path. ii) All packets arrive at the destination with same delay. *

◉ Both i) and ii) are incorrect.

○ Only ii) is true.

○ Only i) is true.

○ Both i) and ii) are correct.

In an Ethernet local area network, which one of the following statements is TRUE?
*

☐ A station continues to transmit the packet even after the collision is detected

☑ The exponential back-off mechanism reduces the probability of collision on retransmissions

☐ The purpose of the jamming signal is to pad the frames that are smaller than the minimum frame size

☐ A station stops to sense the channel once it starts transmitting a frame

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If the data to be sent consists of n bits, then parallel transmission offers increases the transfer speed by a factor of _____ as compared to serial transmission. *

○ 1

○ n^2

◉ n

○ n/2

A sender uses CRC method and to send a message 1101011011; where the generator polynomial is $x^4 + x + 1$. What is the actual message with CRC bits (code word) transmitted: *

○ 11010110111101

○ 11010110111100

○ 11010110111000

◉ 11010110111110

End-to end delivery is the responsibility of which of the following layers in OSI Model? *

◉ Transport Layer

◯ Application layer

◯ Physical layer

◯ Network layer

Which of the following is not a Medium Access Control (MAC) protocol in wireless networks *

☐ CSMA/CA

☑ CSMA/CD

☑ Slotted ALOHA

☐ Polling

Which one of the following switching techniques uses multiplexing? *

☑ Packet Switching

☑ Circuit Switching

☐ Message Switching

☐ None of the above

Select the incorrect statement in context to back-off algorithm - *

- ☐ Back off time increases exponentially
- ☑ Back off time decreases exponentially
- ☐ None of the above
- ☐ Collision probability decreases exponentially

A sender has two data items to send 0x4567 and 0XBA98 What is the value of checksum ? *

- ○ 1101
- ○ 1001
- ● 0000
- ○ 0001

Data transmitted in Physical layer is in *

- ☐ None of the above
- ☑ Packets
- ☑ Electromagnetic signals
- ☑ Frames

Consider a sender A who wishes to send the message "011011000"to receiver B. But the message received at receiver side is "001011100". The length of burst error in this case is _____ *

- ◉ 6
- ○ 5
- ○ 2
- ○ 4

Single parity check cannot detect *

- ◉ even number of errors
- ○ any number of errors
- ○ odd number of errors
- ○ single bit error

In which devices from the following there is no possibility of collision? *

- ☐ Repeater
- ☑ Router
- ☐ Hub
- ☑ Bridge

If the Sender Window Size= N, then the minimum number of sequence numbers required in case of Go Back N and Selective Repeat Protocols will be _____ and _____ respectively. *

○ N+1, N

○ N, N

○ N, N+1

● N+1, 2N

Mode of transmission utilized in real time audio and video applications is - *

● Isochronous transmission

○ Parallel transmission

○ Asynchronous transmission

○ Synchronous transmission

Which of the following is the service(s) that works on physical layer? *

☐ IEEE 802.2

☐ None of the above

☑ IEEE 802.3

☑ Bluetooth

How many redundant bits are sent along with the data in single parity check method for error detection? *

○ 0

○ 4

◉ 1

○ 2

Suppose that selective repeat sliding window protocol is being used for communication; where the frame size is equal to 1 KB, bandwidth of the link is 1.5 Mbps and one-way latency is 50 msec. For a situation where the target is to achieve 60% efficiency, the maximum number of bits required to represent the sequence number field is _____.

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Which of the following is a data link protocol? *

☑ Point to point protocol

☑ HDLC

☑ Ethernet

☐ Token Ring

Which of the following are false with respect to protocols and standards? *

☐ ANSI and IEEE are examples of Standards creation committees

☑ Standards provide a set of rules that governs data communication

☑ Protocols are created by communities, forums and government regulatory

☐ Protocols have three elements

Choose the correct option about LLC layer : *

☐ This layer deals with the issues of string representation

☑ Frame Sequence Numbers are assigned by LLC

☐ This layer deals with the syntax and semantics of the messages Statement

☑ It is responsible to manage and to ensure the integrity of data transmissions Statement

Which of the following is false? *

☑ WAN is faster than other network

☐ Cable operator is example of MAN

☐ Propagation delay in LAN is low

☐ MAN is hard to design and maintain

Which of the following is true with respect to network typologies? *

☑ Ring topology is difficult to reconfigure

☑ Star topology has single point of faliure

☐ Mesh topology has single point of failure

☐ Bus topology is difficult to reconfigure

Coaxial cables are more susceptible to noise as compared to twisted pair cables. *

○ There is no noise in Coaxial cable

○ True

◉ False

Which of the statements are true for CDMA ? *

○ CDMA differs TDMA because only channel occupies entire bandwidth

○ CDMA differs FDMA because all stations can send data simultaneously

○ both of the above

◉ none of the above

Encapsulation in OSI involves *

○ **All of above**

○ Adding headers and sometimes trailers to PDUs two form a lower layer payload

○ Encrypting data for security

○ Breaking a PDU into smaller pieces to fit into lower layer MTUs

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The frequency of a given signal is 100 kHz. The time period will be_____ milliseconds. *

○ 0.1

● 0.01

○ 1

○ 10

Suppose Go Back N protocol is used for flow control; where other details are as follows: i) window size=4 ii) Total 10 packets are to be sent from sender to the receiver. iii) Every sixth packet that is transmitted is lost. The total number of transmissions made from the sender to the receiver is _____

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