



Computer Networks, Computer and Communication Networks (630411,650522) Second Exam

Student Name: -

ID: -

Q1:- Chose the correct answer for the followings

6 points

1- 10Base-FX Ethernet standard use _____ as transmission media.

- (a) UTP (b) Thin Coaxial cable (c) Thick Coaxial cable (d) **Optical Fiber**

2- The main function of Medium Access Control (MAC) Layer is:

- (a) Assemble and disassemble data into frames (b) **Perform address recognition and error detection and Govern Access to LAN** (c) transmission of link level PDUs between stations (d) Provide interface to higher layer and control flow and error detection

3- The _____ field in IPv4 header indicates that this is not the last fragment:

- (a) Data unit Identification (b) Data Length (c) Offset (d) **More bit**

4- The Access mechanism used in wireless networks is:

- (a) **CSMA** (b) CSMA/CD (c) ALOHA (d) 1-Persistent CSMA

5- The physical and logical Topologies of HUB are:-

- (a) Physical Bus , Logical Bus (b) Physical Bus , Logical star (c) **Physical Star , Logical Bus** (d) Physical Star , Logical Star

6- The mapping from IP address to MAC address can be done using :

- (a) ICMP protocol (b) **ARP protocol** (c) IP protocol (d) LLC protocol

Q2:- in wireless network standard IEEE 802.11 explain the use of Interframe Spacing (IFS) waiting time.

1 points

To ensure there is no collision will occur in wireless communication

Q3: In Ethernet IEEE 802.3 standard Explain the function of PAD field In MAC frame format

1 point

The ensure that the MAC frame has the minimum length required for collision detection

Q4:- given the following network Address, divide the network to 4 sub networks and find the subnet mask and network address and broadcast address for each sub network.

5 points

IP: 191.0.0.0

Number of bits required for subnetting is 2 Subnet Mask :- 255.255.192.0		
Net #	Network Address	Broadcast Address
1	191.0.0.0	191.0.63.255
2	191.0.64.0	191.0.127.255
3	191.0.128.0	191.0.191.255
4	191.0.192.0	191.0.255.255

Q5:- Explain the operation of CSMA/CD used in Ethernet Standard IEEE 802.3

2 points

- 1. If the medium is idle, transmit; otherwise, go to step 2.**
- 2. If the medium is busy, continue to listen until the channel is idle, then transmit immediately.**
- 3. If a collision is detected during transmission, transmit a brief jamming signal to assure that all stations know that there has been a collision and then cease transmission.**
- 4. After transmitting the jamming signal, wait a random amount of time, referred to as the backoff, then attempt to transmit again (repeat from step 1).**

Q6:- in IEEE 802.11 Wireless Network standard, a four-frame exchange of data can be used to enhance reliability of communication, explain this operation.

2 points

- 1. source issues a Request to Send (RTS) frame**
- 2. destination responds with Clear to Send (CTS)**
- 3. after receiving CTS, source transmits data**
- 4. destination responds with ACK**

Q7:- what is the difference between Store-and-Forward and Cut-Through Switches and what are the advantages and disadvantages of both.

3 points

store-and-forward switch	cut-through switch
accepts frame on input line, buffers briefly, routes to destination port	use destination address at beginning of frame switch begins repeating frame onto output line as soon as destination address is recognized
Advantage: boosts overall integrity	Advantage: highest possible throughput
Disadvantage: delay between sender and receiver	Disadvantage: risk of propagating bad frames

Good Luck

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