

<p align="center">Philadelphia University Faculty of Engineering Department of Computer Engineering</p>		<p align="right">Date:- 27/12/2017 Allowed time:- 50 Minutes</p>
<p>Computer Network (630411,650522)</p>		<p>Second Exam</p>
<p>Student Name: - ID: -</p>		

Question 1: choose the correct answer for the following questions.

5 Points

1. The main disadvantage of Cut-through switch is:
 - A) delay between sender and receiver
 - B) lowest possible throughput
 - C) propagation of damaged frames
 - D) Frame handling done in software

2. The field in LLC PDU that is used to identify Destination user of LLC layer is:
 - A) SSAP
 - B) DSAP
 - C) LLC control
 - D) CRC

3. 10BaseFX Ethernet standard use _____ as transmission media.
 - A) UTP
 - B) Thin Coaxial cable
 - C) Thick Coaxial cable
 - D) Optical Fiber

4. In wireless networks The set of stations controlled by single coordination function is called:
 - A) BSS
 - B) ESS
 - C) AP
 - D) DS

5. Which of the following fields in IP header is not used in fragmentation/reassembly process.
 - A) Identifier
 - B) More bit
 - C) Length
 - D) Time to Live (TTL)

Question 2: in MAC layer frame explain the use of **Padding** field. **1 point**

Pad: Octets added to ensure that the frame is long enough for proper CD operation.

Question 3: in IPv4 why re-assembly process performed on destination only? **3 Points.**

- Because at Intermediate re-assembly
- Need large buffers at routers
 - Buffers may fill with fragments
 - All fragments must go through same router

Question 4: explain the CSMA/CD access method used in Ethernet.

4 points

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

Question 5: Why IP checksum needs to be recalculated at routers.

1 point

Because routers may change the content of IP header like TTL field or in case of fragmentation length and more bit fields.

Question 6: In wireless network explain the Four Frame Exchange process used to transfer single frame of Data.

2 points

- Source issues a Request to Send (RTS) frame
- Destination responds with Clear to Send (CTS)
- After receiving CTS, source transmits data
- Destination responds with ACK

Question 7: given the following network IP address, break the network to 3 subnetworks and find subnet mask and network address and broadcast address for each subnet.

4 points

IP:- 198.0.0.0

Class C network.

3 sub networks need 2 bits from host address.

The network mask is 255.255.255.192

Network	Network Address	Broadcast Address
Sub-Network 1	198.0.0.0	198.0.0.63
Sub-Network 2	198.0.0.64	198.0.0.127
Sub-Network 3	198.0.0.128	198.0.0.191