جامعة الأهرام الكندية
AHRAM CANADIAN UNIVERSITY
Faculty of Computer Science & IT

Course name: Network I
Course Code: CNE 304
Lecturer: Dr. Ahmed ElShafee

Exam number: Midterm II – Model Answer
Exam Date: 22/05/2011
Time Allowed: 90 minutes

Name: _____
ID: _____

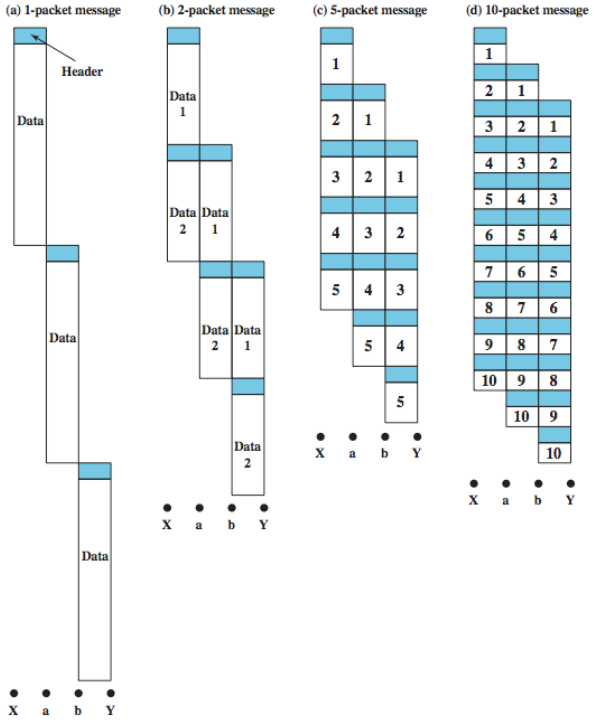
[1]-[20]	[21]-[25]	Total
/20	/10	/30

1	Which TCP/IP layer defines the functions of logical network addressing and routing? a. Application b. Transport c. Internetwork layer d. Network interface layer	C
2	Which of the following terms are not valid terms for the names of the seven OSI layers? (2) a. Application b. Data link c. Transmission d. Presentation e. Internetwork f. Session	C, E
3	The process of a client pc of adding a TCP header, then an IP header, and then data link header and trailer is an example of what? a. Data encapsulation b. Same-layer interaction c. The OSI model d. All of the above e. None of the above	A
4	Which of the following terms is used specifically to identify the entity that is created when encapsulating data inside IP layer? a. Data b. Chunk c. Segment d. Frame e. packet f. None—there is no encapsulation by the IP layer	E

5	Which of the following protocols are examples of TCP/IP application layer protocols? (2) a. Ethernet b. HTTP c. IP d. UDP e. SMTP f. TCP g. PPP	B, E
6	Which of the following protocols are examples of TCP/IP network interface layer protocols? (2) a. Ethernet b. HTTP c. IP d. UDP e. SMTP f. TCP g. PPP	A , G
7	Which TCP/IP layer defines the standards for cabling and connectors? a. Application b. Transport c. Internetwork layer d. Network interface layer	d
8	Which TCP/IP layer defines the standards data multiplexing between different applications? a. Application b. Transport c. Internetwork layer d. Network interface layer	b
9	The process of IP layer on one computer is adding source and destination addresses to a data packets, and in the receiving computer is to remove these addresses from data packets, is an example of what? a. Data encapsulation b. Same-layer interaction c. Adjacent-layer interaction d. The OSI model e. None of the above	B

10	The process of HTTP asking TCP to send some data and make sure that it is received correctly is an example of what? a. Same-layer interaction b. Adjacent-layer interaction c. The OSI model d. All of the above e. None of the above	B
11	……. is a device that connects different terminals and responsible of switching data between them a. node b. station c. terminal d. link	A
12	TDM is a multiplexing technique that allows multiple terminals to be connected to a switching node, sharing different logical channels in different bands using single physical link a. true b. false Justify… TDM uses time multiplexing not frequency multiplexing	b
13	The delay prior to signal transfer for call establishment found in (2) a. circuit switching technique b. data gram switching approach c. virtual circuit approach	A, C
14	…… is the communication link between two intermediate nodes. a. access link b. indirect link c. local loop d. trunk	d
15	Exchanges use multiplexing techniques to share the physical links between them in voice transfer as well as data transfer. a. true b. false Justify… Voice is converted to digital format then transferred using standard multiplexing techniques with data	A

16	In packet switching technique, packets may be blocked from receiving end as it is busy with handling other packets from another sending end. a. true b. false Justify… Receiving end contains buffers, and uses multiplexing techniques to be able to handle multiple transmissions and the same time.	b
17	The number of cross points doubles the number of attached stations. a. true b. false Justify… Square	b
18	In virtual circuit approach nodes are allowed to change their route to face other nodes failure a. true b. false Justify…. Route is fixed	
19	Virtual circuits approaches in packet switching techniques overall transmission speed ….. transmission speed of circuit switching technique a. equals to b. less than c. more than d. can't be judjed justification? VC divide data into packets, each node has to buffer the packets before forwarding these packets to the second node.	c

20	The most effective delay in packet switching technique, data gram approach a. propagation delay b. node delay c. transmission delay Justify? Routing decision in each node	b
	The following figure describes the packet sizing effects on overall transmission speed.  The message consists of 100 octets; node adds 5 octets of control information at the beginning of each packet in the header, and data rate 1 octet/us, Ignoring switching time.	
21	In 1 packet message, calculate thw total transmission time T = 3 x 105 = 315 us	
22	In 2 packet message, calculate thw total transmission time T = 4 x 55 = 220 us	

23	In 5 packet message, calculate thw total transmission time T = 7 x 25 = 175 us	
24	In 10 packet message, calculate thw total transmission time T = 12 x 15 = 180 us	
25	The optimum packet size is 5 packets, 20 data octet + 5 control octet / packet	

Bonus 10 marks	From your previous calculationsm drive a formula for calculating transmission time, in terms of total message length, number of packets, control header length (assume tx speed = 1 unit time/1 octet, 2 intermediate nodes) (Number of packets + 2) x ((total message length/number of packets) + control length) = unit time	