

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

Exam number: Final – Model Answer
 Exam Date: 14/06/2011
 Time Allowed: 120 minutes

Name: _____
 ID: _____

***** write your answer in the right column *****

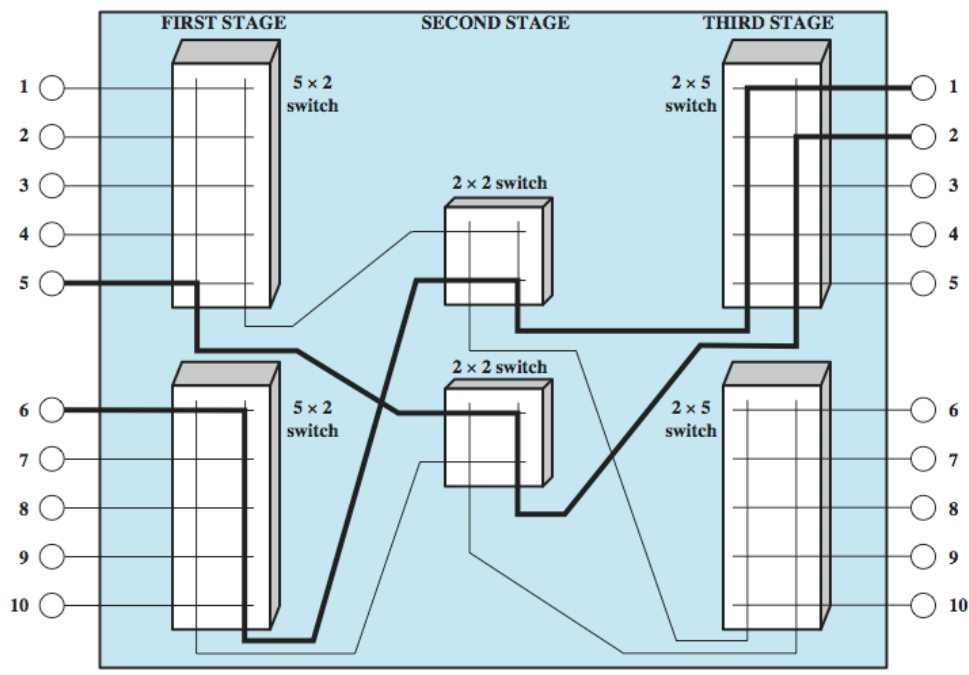
1	Which of the following protocols is an example of TCP/IP transport layer protocols? a. Ethernet b. HTTP c. IP d. UDP e. SMTP f. ICMP g. PPP	D
2	Which of the following protocols are examples of TCP/IP application layer protocols? (2) a. Ethernet b. HTTP c. IP d. UDP e. FTP f. TCP g. PPP	B, e
3	3. Which TCP/IP layer defines the functions of logical network-wide addressing and routing? a. Application b. Transport c. Network interface layer d. Internetwork layer	d
4	Which TCP/IP layer defines the standards for cabling and connectors? a. Physical layer b. Transport layer c. Internetwork layer d. Application layer	a

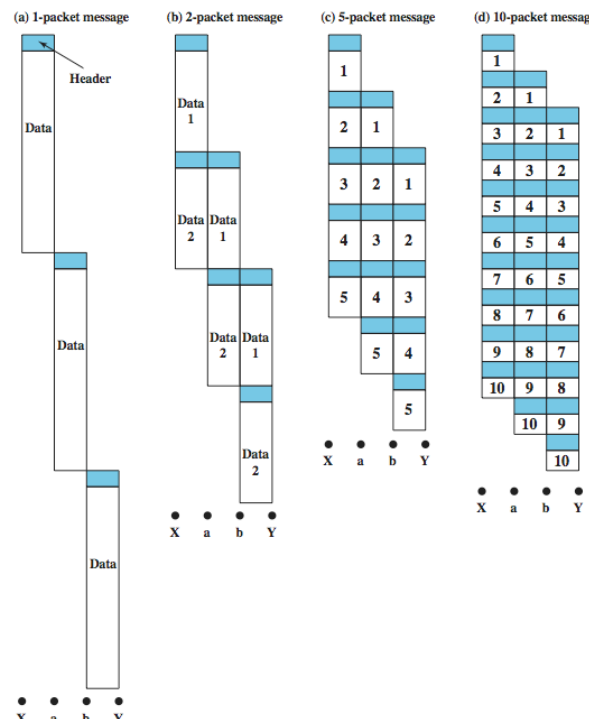


5	Which TCP/IP layer defines the standards for data formats and encryption? a. Physical layer b. Transport layer c. Internetwork layer d. Application layer	d
6	Which of the following terms are valid terms for the names of the seven OSI layers? (4) a. Application b. Data link c. Transmission d. Presentation e. Internetwork f. Session	A, b, d, f
7	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 (host to host) b. Adjacent-layer interaction (same host) c. The OSI model d. All of the above e. None of the above	B
8	The process of TCP on one computer marking a segment as segment 1, and the receiving computer then acknowledging the receipt of segment 1, is an example of what? a. Data encapsulation b. Same-layer interaction (host to host) c. Adjacent-layer interaction (same host) d. The OSI model e. None of the above	B
9	The process of a web server adding a TCP header to a web page, followed by adding a TCP header, then an IP header, and then data link header and trailer is an example of what? a. Same-layer interaction (host to host) b. The OSI model c. Data encapsulation d. All of the above e. None of the above	c



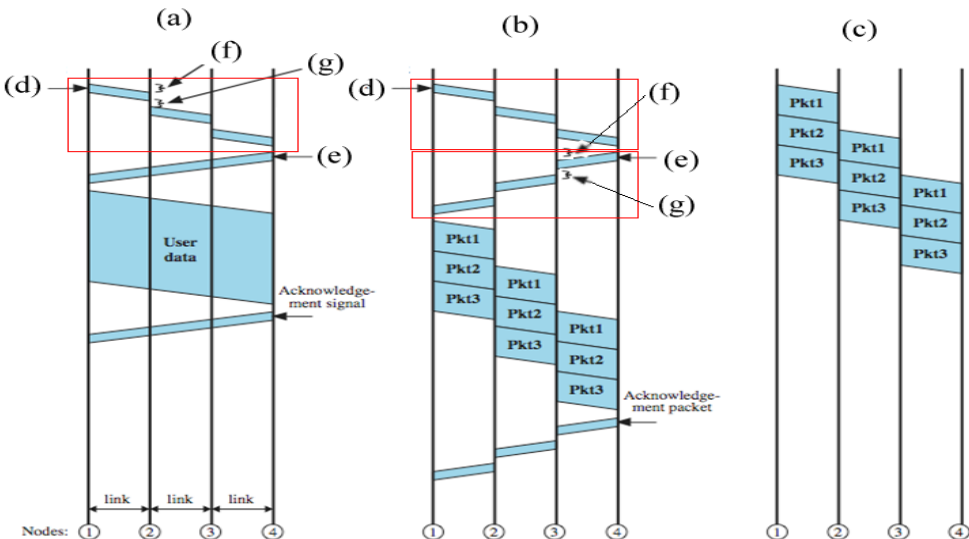
10	<p>Which of the following terms is used specifically to identify the entity that is created when encapsulating data inside data-link headers and trailers?</p> <p>a. Frame b. Data c. Chunk d. Segment e. packet f. None—there is no encapsulation by the data link layer</p>	a
11	<p>A switching devices whose purpose is to provide communication</p> <p>a. terminal b. station c. connector d. node</p>	d
12	<p>Which of the following process are not valid for circuit switching process (2)</p> <p>a. call establishment b. circuit connection c. data transfer d. connection maintenance e. circuit disconnect</p>	a, d
13	<p>Circuit switching can maintain almost 100% utilization of network resources</p> <p>a. true b. false</p> <p>Why?</p> <p>..... Circuit switching links are fully dedicated to single connection during the whole call, so it can't achieve 100% utilization</p>	b
14	<p>Circuit switching originally developed for voice transfer between terminals</p> <p>a. true b. false</p> <p>Justify your answer?</p> <p>..... Circuit switching originally developed for voice exchanging between terminals, as links are fully dedicated for short period for single call</p>	a
15	<p>Trunks are multiplexed links that can connect user terminals to exchanges.</p> <p>a. true b. false</p> <p>Justify your answer?</p> <p>..... Trunks are multiplexed links between exchanges to carry multiple calls between these switches. So they can't connect subscribers.</p>	b

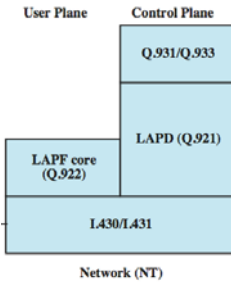
<p>16</p>	<p>In the following multiple-stage switches, which of the following connection can be established</p>  <p>a. 1L → 7R b. 4L → 4R c. 7L → 6R d. 9L → 3R e. 4L → 8R</p>	<p>a, c, e</p>
<p>17</p>	<p>For the previous multi stage switch, if the intermediate switches replaced with one 4x4 switch. Number of simultaneous blocking probability will</p> <p>a. doubled b. half c. squared d. remains the same</p>	<p>d</p>
<p>18</p>	<p>The most effective delay in packet switching technique, data gram approach is</p> <p>a. node delay b. propagation delay c. transition delay</p> <p>Justify?</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>... Nodes take routing decision per packet</p> </div>	<p>a</p>

19	<p>The most effective delay in packet switching technique, virtual circuit approach</p> <ol style="list-style-type: none"> node delay propagation delay transition delay <p>Justify?</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> Packets use the same path during the call, no routing decision in each node </div>	b
20	<p>Virtual circuits approaches in packet switching techniques overall transmission speed transmission speed of circuit switching technique</p> <ol style="list-style-type: none"> equals to less than more than can't be judged <p>justification?</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> VC divide data into packets, each node has to buffer the packets before forwarding these packets to the second node. </div>	c
<p>The following figure describes the packet sizing effects on overall transmission speed.</p> <div style="text-align: center;">  </div> <p>The message consists of 30 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.</p>		



21	<p>In 1 packet message, total transmission time equals to</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> $=3x(30+5)=105 \text{ usec}$ </div> <p>.....</p> <p>.....</p>	105
22	<p>In 2 packets message, total transmission time equals to</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> $=4x(15+5)=80 \text{ usec}$ </div> <p>.....</p> <p>.....</p>	80
23	<p>In 5 packets message, total transmission time equals to</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> $=7x(6+5)=77 \text{ usec}$ </div> <p>.....</p> <p>.....</p>	77
24	<p>In 10 packets message, total transmission time equals to</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> $=12x(3+5)=96 \text{ usec}$ </div> <p>.....</p> <p>.....</p>	96
25	<p>The optimum packet size is</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> Smallest transmission time </div> <p>.....</p> <p>.....</p>	15 octet, 5 packets , 6 data + 5 control

	<p>The following figure shows three different approaches of switching</p> 	
26	<p>Sub figure (a) refers to</p> <ul style="list-style-type: none"> a. frame relay b. Asynchronous Transfer Mode c. Virtual circuit packet switching d. data frame packet switching e. circuit switching 	e
27	<p>Sub figure (b) refers to</p> <ul style="list-style-type: none"> a. frame relay b. Assynonus Transfere Mode c. Virtual circuit packet switching d. data frame packet switching e. circuit switching 	c
28	<p>Sub figure (c) refers to</p> <ul style="list-style-type: none"> a. frame relay b. Assynonus Transfere Mode c. Virtual circuit packet switching d. data frame packet switching e. circuit switching 	d
29	<p>Process (d) called</p> <ul style="list-style-type: none"> a. routing preparation process b. call establishment process c. path clearance process d. end to end path establishment process 	b

30	<p>Process (e) called</p> <ul style="list-style-type: none"> a. feedback b. acknowledgment c. recovery d. response 	b
31	<p>Delay (f) called</p> <ul style="list-style-type: none"> a. node delay b. transition delay c. assembling delay d. propagation delay 	d
32	<p>Delay (g) called</p> <ul style="list-style-type: none"> a. node delay b. transition delay c. assembling delay d. propagation delay 	a
33	<p>X.25 protocol is not a reliable protocol which was solved in frame relay protocol</p> <ul style="list-style-type: none"> a. true b. false <p>justify</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>X.25 is a reliable protocol unlike frame relay, as it sends acknowledgement for each packet sent</p> </div>	b
34	<p>data link connection identifier (DLCI) is to identify</p> <ul style="list-style-type: none"> a. virtual circuit in virtual circuit packet switching approach b. logical link in frame relay switching approach c. virtual path in Asynchronous Transfere Mode d. virtual channel in Asynchronous Transfere Mode 	b
35	<p>The following figure shows frame relay protocol architecture for network terminals. User plane contains only two layers while control plane contains 3 layers.</p> <div style="text-align: center;">  </div> <ul style="list-style-type: none"> a. packet is fixed size, so no need to implement packet layer in nodes. b. data is not transmitted between nodes as packets. c. sequencing is used for control packets and not used for data packets. d. data packets share the same protocol (3rd layer) defined for control packets. 	c



36	ATM is a. a frame relay implementation b. a cell relay implementation c. a circuit switch implementation d. a packet switch implementation	b
37	Which one is true about ATM and Packet Switching a. Both ATM and Packet Switching have relatively small size cells b. Packet Switching has no windowing while ATM has c. Both have fixed length cells d. ATM has no error detection on data while Packet Switching has	d
38	The difference between X.25 and frame relay is a. only frame relay is connection-oriented b. only frame relay has error control c. only X.25 is reliable d. only X.25 is virtual circuit	c
39	The difference between ATM and frame relay is a. only ATM is virtual circuit b. only frame relay has error control c. only frame relay is connection-oriented d. only ATM is unreliable	b
40	The difference between ATM and X.25 is a. only ATM is connection-oriented b. only X.25 has error control c. only X.25 is virtual circuit d. only ATM is reliable	b
41	ATM is well suited for a. voice, interactive data and video transfer b. interactive data transfer but not for voice transfer c. voice and video transfer only d. voice and interactive data transfer only	a
42	Routing is the responsibility of a. The data link layer b. The network layer c. The physical layer d. The transport layer	b
43	Network cable lies on _____ layer a. Application b. Network c. Physical	c

44	<p>_____ layer decides which physical pathway the data should take.</p> <p>a. Application b. Network c. Physical</p>	b
45	<p>Which of the following statement is true about FLOW CONTROL?</p> <p>a. Flow control is a function performed by a receiving entity to limit the amount or rate of data on a network. b. Flow control adjusts the weights on a network c. Flow control is a function performed by the MODEM d. Flow control is an advanced form of network management</p>	a
46	<p>Identify the most suitable description for ERROR CONTROL?</p> <p>a. Error control is an activity that manages deadlock. b. Error control is an advanced form of parity bit c. Error control is a sub-function of a modem and Hub d. Error control is needed to guard against loss or damage of data</p>	d
47	<p>The primary function of the network layer is:</p> <p>a. Error detection b. Set up a session c. Routing d. Encryption</p>	c
48	<p>Which of the following is not true of Switching technology?</p> <p>a. Packet Switching b. Link Switching c. Packets are switched in the form of datagrams d. Circuit Switching techniques</p>	b
49	<p>Identify any of the following statements which truly describes a virtual circuit.</p> <p>a. Packets are forwarded more quickly and no routing decisions b. More reliable in functionality c. Call set up phases are present d. Packets are centralised at random and more routing decisions are made</p>	a
50	<p>Which of the following is not true about a frame</p> <p>a. Data link layer header b. Network layer header c. Upper layer data d. Data Link layer trailer</p>	c
51	<p>The next hop to which a packet is sent depends only on</p> <p>a. Packet's destination b. Packet's original source c. Path the packet has taken d. Non of the given</p>	a