

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

Exam number: Revision Sheet
 Exam Date: January 2016
 Time Allowed: 120 minutes

Name: _____

ID: _____

***** Type your answer in the table on pages 1, and 2 *****
 ***** (select all applies) *****

Total
/-

#	A	B	C	D	E	
1						A, b, c
2						c
3						B, e,
4						b
5						C
6						B, d
7						d
8						A, b
9						a
10						A, d
11						b
12						A, c,e
13						c
14						c
15						b
16						c
17						A,b,d
18						b
19						B,c
20						A, c



#					
21		■		■	B,d
22	■	■			A, b, e
23	■			■	A,d
24			■		c
25	■	■	■	■	A,b,c,d
26					e
27	■	■		■	A,b,d
28	■		■		A,c
29			■		c
30		■			b
31		■			B,e
32				■	D,e
33	■				a
34	■				A
35				■	d
36				■	d
37		■			b
38	■	■	■		A,b,c
39			■		c
40			■		C
41		■			b
42			■		c, e
43			■		c
44			■		c
45				■	e
46			■		c
47			■		c
48		■			b
49	■				a
50					102
51					76
52					70
53					84
54					15 octet, 5 packets, 6 data + 4 control
55		■			b



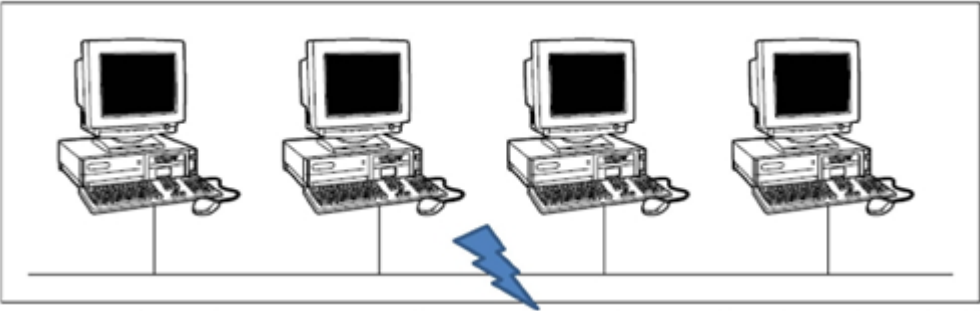
56					c
57					d
58					a, c, e
59					a
60					b
61					c
62					c
63					a, d, e
64					A, b
65					b
66					b
67					b



1	Computers can communicate using a. electrical signals b. electromagnetic signals c. light waves d. sound waves e. magnetic waves	A, b, c
2	most modern operating systems need special software to make the pc a part of a network a. true, but user need to equip his PCs with the required networking hardware. b. true, but user needs to connect his PCs to the internet. c. false, but user needs to install appropriate drivers for installed hardware. d. false, but user need to buy all network equipment from the same vendor	c
3	The following components are the essential blocks to build network (that network can't operate without them) expect a. client computers b. server computers c. cables d. network cards e. routers f. switches/ hubs g. network software	B, e,
4	The communication media for wireless network is a. twisted pair cables b. free space d. fiber cables e. coaxial cables	b
5	Network operating systems are a. a special service back that installed on desktop operating systems. b. same as desktop operating system but supports multiple network interfaces c. can operates on both desktop PCs and server PCs d. a software installed on switches and router to manage the network	C
6	Sharing application is one of benefits of computer network, which refers to a. exchanging applications between network users b. playing games over the network c. accessing internet using network applications d. accessing network user application from another PC on the same network	B, d



7	Peer to peer network is a. a network has no access to the internet b. another name for local area network C. a network has no servers d. a network has no wireless users e. a network has no router f. two local area networks connected together using wide area network technology	c
8	A PC is considered to be a part of WAN a. if PC is connected to LAN which in turn is connected to the internet b. if PC is directly connected to the internet d. if PC is connected to a distant network through WAN technology e. if PC connected to a network using wireless area network technologies	A, b
9	Internet is the network of all networks a. true, as all networks are connected to the internet through special interface equipment called router b. true, as all networks use customized protocol of internet protocol c. false, as most networks use different protocols that not used on the internet d. false, as all networks need special interface equipment like routers to connect internet e. true, as network can't operate without being connected to internet	a
10	MAN is a. a special LAN that is used to connect distant users. b. a special LAN that is used to make distant phone call beside transferring data c. a special WAN that is used by mobile operators d. special LAN that uses special physical layer/data link layer equipment.	A, d
11	In star topology a. all PCs physically and logically connected as a bus topology b. all PCs are connected logically as a bus but physically as a star c. all PCs are connected logically as a star but physically as a bus d. all PC are connected logically as a tree but physically as star e. all PC are connected logically as a star but physically as a tree	b

<p>12</p>	 <p>If bus is disconnected as shown</p> <ul style="list-style-type: none"> a. PCs on the right side can't communicate to PCs on left side b. PCs on the right side can communicate to each other c. PCs on the right side can't communicate to each other d. PCs on the left side can communicate to each other e. PCs on the left side can't communicate to each other 	<p>A, c,e</p>
<p>13</p>	<p>Tree topology is</p> <ul style="list-style-type: none"> a. composite between bus and star topology b. extended version of bus topology c. extended version of star topology d. a bus topology uses tree-connectors instated of T- connectors to connect PCS 	<p>c</p>
<p>14</p>	<p>Low level Network Protocols is</p> <ul style="list-style-type: none"> a. a customized protocols used in telephone networks b. an old protocols that is no longer used on computer networks c. a part of computer networks protocol that defines network hardware d. a part of computer networks protocol that defines network software 	<p>c</p>
<p>15</p>	<p>TCP/IP and Ethernet are</p> <ul style="list-style-type: none"> a. same b. complement to each other d. opposite to each other c. integrates each other 	<p>b</p>
<p>16</p>	<p>OSI stands for</p> <ul style="list-style-type: none"> a. open source internet b. open source interconnection c. open systems interconnection d. open systems internet 	<p>c</p>



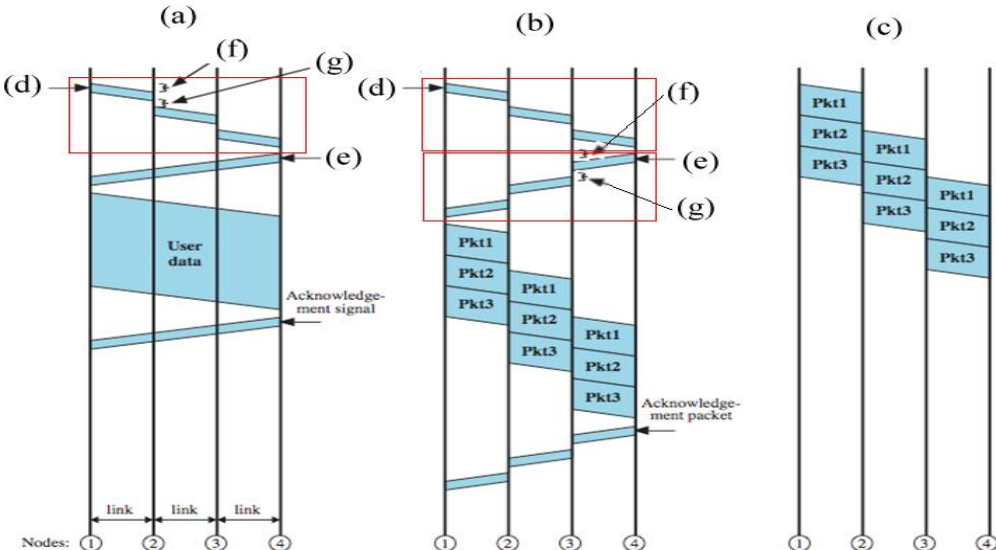
17	Data link layer is responsible of a. addressing hardware components on the network b. select appropriate time to transmit data c. check for data integrity d. check for data validity e. correct corrupted data f. define data representation as electrical signals	A,b ,d
18	Transport layer is responsible of a. transferring data between PCS inside a network b. transferring data between applications on a PC c. transferring data between network card and cables on a PC d. transferring data between nodes inside the network	b
19	Repeaters a. a device that repeats the packet between its ports b. a device that amplifies data between its ports c. a device that used to extend network cable length d. a device that check received packets on one port and forwards the correct ones to other ports.	B,c
20	Hubs a. a multiport repeater b. deal with data segment c. deal with data bits d. deals with cards and nodes addresses e. deals with logical address of network entities	A, c
21	Switches a. a multiport repeater b. deal with data segment c. deal with data bits d. deal with cards and nodes addresses e. deal with logical address of network entities	B,d
22	Bridges a. Enhanced type of Repeater devices b. deals with whole packets c. deals with data bits d. deals with cards and nodes addresses e. deals with logical address of network entities	A, b, e

23	Network layer in (OSI) is a. the third layer b. the second layer c. deals with network entities hardware address d. deals with network entities logical address	A,d
24	Router is a. a multiport switch b. deals with cards and nodes addresses c. deals with logical address of network entities d. extends network cables length	c
25	Presentation layer (OSI) is responsible of a. images encoding b. fonts and codecs c. multimedia encoding d. data encryption	A,b ,c, d
26	10Base 3 is an Ethernet network standard that a. network speed is 10 mbps b. network segment is 300 meters c. uses twisted pair cable d. used coax cables e. none of above	e
27	10Base 5 is an Ethernet network standard that a. network speed is 10 mbps b. network segment is 500 meters c. uses twisted pair cable d. used coax cables e. none of above	A,b ,d
28	10base T is an Ethernet network standard that a. network speed is 10 mbps b. network segment is 500 meters c. uses twisted pair cable d. used coax cables e. none of above	A,c

29	<p>For twisted pair cable</p> <p>a. pins 1,2 are TX, and pins 3,4 are RX</p> <p>b. pins 1,2 are TX, and pins 3,5 are RX</p> <p>c. pins 1,2 are TX, and pins 3,6 are RX</p> <p>d. pins 1,2 are TX, and pins 3,7 are RX</p> <p>e. pins 1,2 are TX, and pins 3,8 are RX</p>	c
30	<p>In cross over cable, which of the following configuration are correct</p> <p>a. 1→2, 2→1, 3→6, 6→3</p> <p>b. 1→3, 2→6, 3→1, 6→2</p> <p>c. 1→6, 2→3, 3→2, 3→1</p> <p>d. 1→3, 2→4, 3→1, 4→2</p> <p>e. 1→3, 2→8, 3→1, 8→2</p> <p>f. 1→3, 2→5, 3→1, 5→2</p> <p>g. 1→5, 2→3, 3→2, 5→1</p>	b
31	<p>CSMA/CD is a protocol that</p> <p>a. avoid collisions by listening to network before sending data</p> <p>b. detect collisions by listening to network before sending data</p> <p>c. recover collisions by listening to network before sending data</p> <p>d. avoid collisions by listening to network after sending data</p> <p>e. detect collisions by listening to network after sending data</p> <p>f. recover collisions by listening to network after sending data</p>	B, e
32	<p>CSMA/CD is a protocol that</p> <p>a. recovers corrupted data by a collision by sending packet again</p> <p>b. drops corrupted data by a collision, and ask for it again</p> <p>c. can't deal with collision if happened</p> <p>d. stop sending data if collision is happened</p> <p>e. informs all network entities that a collision is happened</p>	D,e
33	<p>Collision domain is</p> <p>a. all PCS that connected to a single hubs</p> <p>b. all PCS that is connected to a single router</p> <p>c. all PCS that is connected to a single switch</p> <p>d. none of above</p>	a
34	<p>Token ring is a</p> <p>a. protocol like Ethernet but uses another standard</p> <p>b. network topology</p> <p>c. Ethernet network connected using ring topology</p> <p>d. WAN standard that used for MANs</p>	A



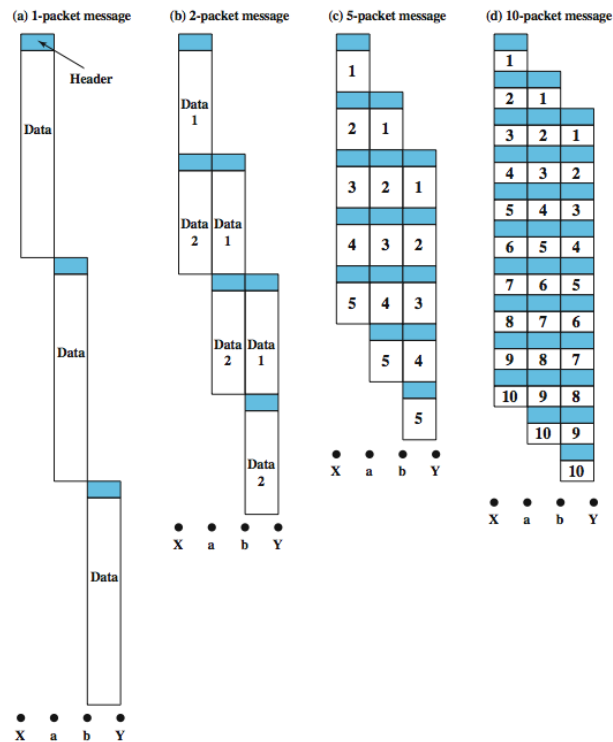
35	Webmail uses a. SMTP protocol to send emails and POP3 protocol to receive emails b. WM protocol to send/receive emails. c. Email protocol to send receive emails d. HTTP/HTTPS protocol to send/receive emails	d
36	Total number of available IPs version 4 a. 256 b. 65536 c. 1.67 E7 d. 4.29 E9	d
37	App A @ PC1 is sending a packet to App b @PC2. App A know that App B is listening for port 80 for all incoming packets. now App B @ PC2 is sending a packet back to App A @ PC1. The sender port and receiver port are a. (1024<random<65536)- 80 b. 80 - (1024<random<65536) c. 80 - 80 d. (1<random<1024) – 80 e. 80 - (1<random<1024)	b
38	PC1 IP is 192.168.1.5, subnet mask is 255.255.252.0, PC2 IP is 192.168.2.5, subnet mask 255.255.252.0. which of the following IPs may presents a valid gateway a. 192.168.1.1 b. 192.168.2.1 c. 192.168.3.1 d. 192.168.4.1	A,b ,c
39	PC1 IP is 192.168.16.1, PC2 IP is 192.168.32.1, which of the following are valid subnet mask a. 255.255.248.0 b. 255.255.240.0 c. 255.255.192.0 d. 255.255.244.0	c
40	PC1 IP is 192.168.208.1, PC2 IP is 192.168.224.1, which of the following are valid subnet mask a. 255.255.248.0 b. 255.255.240.0 c. 255.255.192.0 d. 255.255.244.0	c

41	<p>A switching devices whose purpose is to provide communication</p> <ul style="list-style-type: none"> a. terminal b. node c. connector d. station 	b
42	<p>Which of the following process are not valid for circuit switching process (2)</p> <ul style="list-style-type: none"> a. circuit disconnect b. circuit connection c. data transfer d. connection maintenance e. call establishment 	c, e
	<p>The following figure shows three different approaches of switching</p>  <p>(a) Frame Relay: Shows a large block of 'User data' being split into frames (f) and sent over links between nodes 1, 2, 3, and 4. An 'Acknowledgement signal' (e) is sent back from node 4 to node 1. A red box highlights the initial setup phase (d) and the first frame (f).</p> <p>(b) Asynchronous Transfer Mode: Shows packets (Pkt1, Pkt2, Pkt3) being sent in a sequence over links between nodes 1, 2, 3, and 4. An 'Acknowledgement packet' (e) is sent back from node 4 to node 1. A red box highlights the initial setup phase (d) and the first packet (f).</p> <p>(c) Circuit Switching: Shows a single path of packets (Pkt1, Pkt2, Pkt3) being sent sequentially over links between nodes 1, 2, 3, and 4.</p>	
43	<p>Sub figure (a) refers to</p> <ul style="list-style-type: none"> a. frame relay b. Asynchronous Transfere Mode c. circuit cwitching d. data grame packet switching e. Virtual circuit packet switching 	c



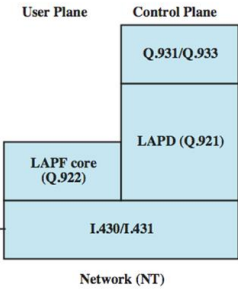
44	Sub figure (b) refers to a. frame relay b. Assynchronus Transfere Mode c. Virtual cirucit packet switching d. data grame packet switching e. circuit cwitching	c
45	Sub figure (c) refers to a. frame relay b. Assynchronus Transfere Mode c. Virtual cirucit packet switching d. circuit cwitching e. data grame packet switching	e
46	Process (d) called a. routing preparation process b. path clearance process c. call establishment process d. end to end path establishment process	c
47	Process (e) called a. Sequencing b. recovery c. acknowledgment d. response	c
48	Delay (f) called a. node delay b. Tranmission delay c. Propagation delay d. transition delay	b
49	Delay (g) called a. node delay b. transition delay c. assembling delay d. transition delay	a

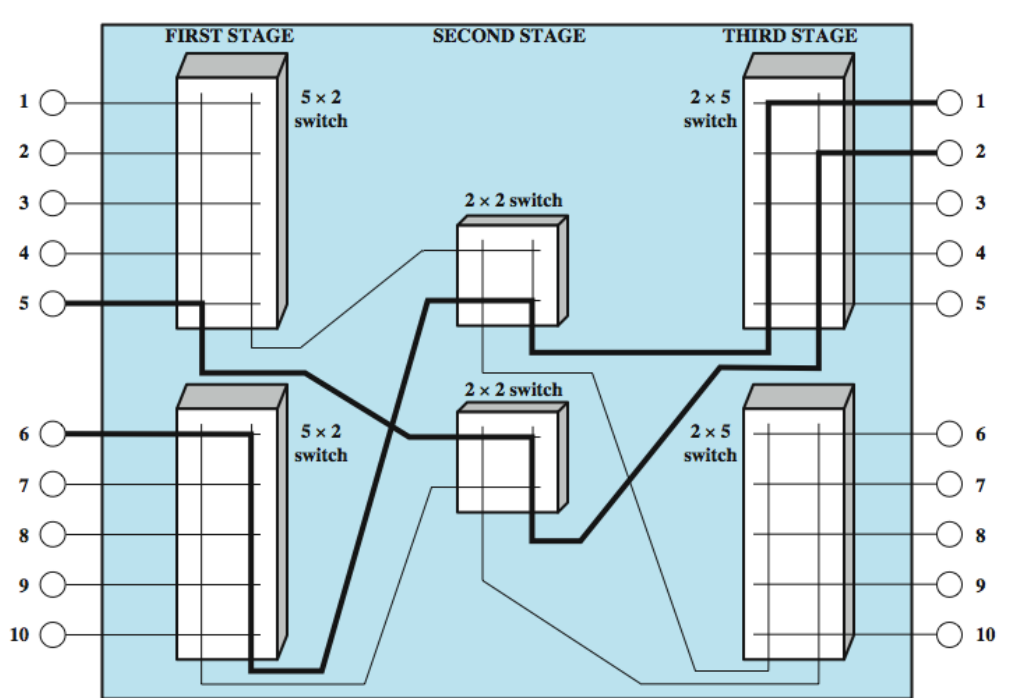
The following figure describes the packet sizing effects on overall transmission speed.



The message consists of 30 octets; node adds 4 octets of control information at the beginning of each packet in the header, and data rate 1 octet/us, Ignoring switching time.

50	In 1 packet message, total transmission time equals to $=3 \times (30+4) = 102 \text{ usec}$	102
51	In 2 packets message, total transmission time equals to $=4 \times (15+4) = 76 \text{ usec}$	76
52	In 5 packets message, total transmission time equals to $=7 \times (6+4) = 70 \text{ usec}$	70
53	In 10 packets message, total transmission time equals to $=12 \times (3+4) = 84 \text{ usec}$	84

54	<p>The optimum packet size is</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> Smallest transmission time = 76 us </div>	15 octet, 5 control, 6 data + 4 control
55	<p>X.25 protocol is not a reliable protocol which was solved in frame relay protocol</p> <p>a. true b. false</p> <p>Why</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> X.25 is a reliable protocol unlike frame relay, as it sends acknowledgement for each packet sent </div>	b
56	<p>data link connection identifier (DLCI) is to identify</p> <p>a. virtual circuit in virtual circuit packet switching approach b. virtual path in Asynchronous Transfere Mode c. logical link in frame relay switching approach d. virtual channel in Asynchronous Transfere Mode</p>	c
57	<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> <p>a. packet is fixed size, so no need to implement packet layer in nodes. b. data is not transmitted between nodes as packets. c. data packets share the same protocol (3rd layer) defined for control packets. d. sequencing is used for control packets and not used for data packets.</p>	d

<p>58</p>	<p>In the following multiple-stage switches, which of the following connection can be established (3)</p>  <p>a. 1L → 7R b. 4L → 4R c. 7L → 6R d. 9L → 3R e. 4L → 8R</p>	<p>a, c, e</p>
<p>59</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. remain the same b. half c. squared d. doubled</p>	<p>a</p>
<p>60</p>	<p>The most effective delay in packet switching technique, data gram approach is</p> <p>a. transmission delay b. node delay c. transition delay, Why?</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>... Nodes take routing decision per packet</p> </div>	<p>b</p>

61	<p>The most effective delay in packet switching technique, virtual circuit approach</p> <p>a. node delay b. transition delay c. Transmission delay</p> <p>Why?</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Packets use the same path during the call, no routing decision in each node</p> </div>	c
62	<p>Virtual circuits approaches in packet switching techniques overall transmission speed transmission speed of circuit switching technique</p> <p>a. equals to b. less than c. more than d. can't be judged</p> <p>Why?</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>VC divide data into packets, each node has to buffer the packets before forwarding these packets to the second node.</p> </div>	c
63	<p>TCP layer is responsible of (3)</p> <p>a. packet data error checking b. packet data error recovery c. peer hosts connectivity d. peer applications connectivity e. communication session reliability</p>	a, d, e
64	<p>The transmission delay equals to (2)</p> <p>a. link speed/packet size b. link length/wave propagation speed c. node buffer length/packet length d. node switching speed.</p>	A, b
65	<p>Circuit switching almost maintain 100% utilization of network resources</p> <p>a. true b. false</p> <p>Why?</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Circuit switching links are fully dedicated to single connection during the whole call, so it can't achieve 100% utilization</p> </div>	b



66	<p>Circuit switching originally developed for both data & voice transfer between terminals</p> <p>a. true b. false</p> <p>Why?</p> <p>.....</p> <div data-bbox="337 373 1247 468" style="border: 1px solid black; padding: 5px;">Circuit switching originally developed for voice exchanging between terminals, as links are fully dedicated for short period for single call</div>	b
67	<p>Trunks are multiplexed links that can connect user terminals to exchanges.</p> <p>a. true b. false</p> <p>Why your answer?</p> <p>.....</p> <div data-bbox="337 653 1247 747" style="border: 1px solid black; padding: 5px;">Trunks are multiplexed links between exchanges to carry multiple calls between these switches. So they can't connect subscribers.</div>	b