Lecturer:	(Date)	Approved by:	(Date)
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(The above part must be hidden when copying for exam)

UNIVERSITY OF TECHNOLOGY - VNUHCM FACULTY OF CSE	FINAL EXAM	Semester/Academic year	2	2019-2020
		Date		23 July 2020
	Course title	Computer Networks		
	Course ID	CO3003		
	Duration	90 mins.	Question sheet code	1921

Notes: *- Closed book (No supporting documents allowed to use)*
- Choose the most appropriate answer and shade ONE letter only for each question.
- Make sure you put your answer in line with the correct question number.
- Submit the question sheet together with the answer sheet.

Question 1. **(L.O.1.2) A collection of various interconnected computers that seems a single coherent system to its client is considered as?**

a) computer network
b) distributed system
c) networking system
d) mail system

Question 2. **(L.O.1.2) Which is a device that forwards packets between networks by processing the routing information included in the packet?**

a) bridge
b) firewall
c) router
d) hub

Question 3. **(L.O.1.2) What is the function of DSLAM?**

a) Convert analog signals into digital signals
b) Convert digital signals into analog signals
c) Amplify digital signals
d) De-amplify digital signals

Question 4. **(L.O.1.2) Home Access can be provided by?**

a) DSL
b) FTTP
c) Cable
d) All of the mentioned

Question 5. **(L.O.5.1) Which of the following is the multiple access protocol for channel access** control?

a) CSMA/CD
b) CSMA/CA
c) Both CSMA/CD & CSMA/CA
d) HDLC

Question 6. **(L.O.3.1) Choose the correct statement bout Transmission control protocol (TCP)?**

a) is a connection-oriented protocol
b) uses a three-way handshake to establish a connection
c) receives data from application as a single stream
d) all of the mentioned

Question 7. **(L.O.5.1) If link transmits 4000 frames per second, and each slot has 8 bits, the transmission rate of this TDM circuit is?**

a) 32kbps
b) 500bps
c) 500kbps
d) 32bps

Question 8. **(L.O.1.2) Which of the following delay is faced by the packet in travelling from one end system to another?**

a) Propagation delay
b) Queuing delay
c) Transmission delay
d) All of the mentioned

Question 9. **(L.O.5.1) For a 10Mbps Ethernet link, if the length of the packet is 32bits, the transmission delay is _____ (in microseconds)**

a) 3.2
b) 32
c) 0.32
d) 320

Question 10. **(L.O.1.2) Given L = number of bits in the packet, a = average rate and R = transmission rate. The Traffic intensity in the network is given by _____**

a) La/R
b) LR/a
c) R/La
d) Ra/L

Question 11. **(L.O.1.2) If end to end delay is given by d*end-end* = N*(d*proc* + d*trans* + d*prop*) on a non-congested network. The number of routers between source and destination is?**

a) N/2
b) N
c) N-1
d) 2N

Question 12. **(L.O.1.2) In a network, If P is the only packet being transmitted and there was no earlier transmission, which of the following delays could be zero?**

a) Propagation delay
b) Queuing delay
c) Transmission delay
d) Processing delay

Question 13. **(L.O.2.1) Which one of the following is an application architecture paradigm?**

a) Peer to peer
b) Client-server
c) HTTP
d) Both Peer-to-Peer & Client-Server

Question 14. **(L.O.2.1) Application developer has permission to decide the which of the following on transport layer side?**

a) Transport layer protocol
b) Maximum buffer size
c) Both Transport layer protocol and Maximum buffer size
d) None of the mentioned

Question 15. **(L.O.2.1) Which is a time-sensitive service?**

a) File transfer
b) File download
c) E-mail
d) Internet telephony

Question 16. **(L.O.2.1) Which one of the following protocols delivers/stores mail to receiver server?**

a) simple mail transfer protocol
b) post office protocol
c) internet mail access protocol
d) hypertext transfer protocol

Question 17. **(L.O.2.2) In the process of fetching a web page from a server the persistent HTTP request/response takes how many RTTs?**

a) 2
b) 1
c) 4
d) 3

Question 18. **(L.O.2.2) Which of the following is NOT correct?**

a) Web cache doesn't have its own disk space
b) Web cache can act both like server and client
c) Web cache might reduce the response time
d) Web cache contains copies of recently requested objects

Question 19. **(L.O.2.2) If you have to send multimedia data over SMTP it has to be encoded into which format?**

a) Binary
b) Signal
c) ASCII
d) Hash

Question 20. **(L.O.2.2) When the sender and the receiver of an email are on different systems, what do we need ?**

a) One MTA
b) Two UAs
c) Two UAs and one MTA
d) Two UAs and two MTAs

Question 21. **(L.O.2.2) Choose the statement which is wrong in case of SMTP?**

a) It requires message to be in 7bit ASCII format
b) It is a pull protocol
c) It transfers files from one mail server to another mail server
d) SMTP is responsible for the transmission of the mail through the internet

Question 22. **(L.O.2.2) What happens if a server has no clue about where to find the address for a hostname?**

a) server asks to the root server
b) server asks to its adjacent server
c) request is not processed
d) none of the mentioned

Question 23. **(L.O.2.2) Which one of the following is not true?**

a) multiple hostnames may correspond to a single IP address
b) a single hostname may correspond to many IP addresses
c) a single hostname may correspond to a single IP address
d) none of the mentioned

Question 24. **(L.O.2.2) IP assigned for a client by DHCP server is _____**

a) for a limited period
b) for an unlimited period
c) not time dependent
d) none of the mentioned

Question 25. **(L.O.2.2) When a host acquires multiple offers of IP addresses from different DHCP servers, the host will broadcast a DHCP request identifying the server whose offer has been accepted. The DHCP server can provide the _____ of the IP addresses.**

a) dynamic allocation
b) automatic allocation
c) static allocation
d) all of the mentioned

Question 26. **(L.O.3.1) In TCP, sending and receiving data is done as which data format?**

a) Stream of bytes
b) Sequence of characters
c) Lines of data
d) Packets

Question 27. **(L.O.3.1) TCP process may not write and read data at the same speed. So, what do we need for storage?**

a) Packets
b) Buffers
c) Segments
d) Stacks

Question 28. **(L.O.3.1) To achieve reliable transport in TCP, which mechanism is used to check the safe and sound arrival of data?**

a) Packet
b) Buffer
c) Segment
d) Acknowledgment

Question 29. **(L.O.3.1) Suppose a TCP connection is transferring a file of 1000 bytes. The first byte is numbered 10001. What is the sequence number of the segment if all data is sent in only one segment?**

a) 10000
c) 12001
b) 10001
d) 11001

Question 30. **(L.O.3.1) The receiver of the data controls the amount of data that are to be sent by the sender is referred to as?**

a) Flow control
c) Congestion control
b) Error control
d) Error detection

Question 31. **(L.O.3.1) Which field allows TCP to detect lost segments and in turn recover from that loss?**

a) Sequence number
b) Acknowledgment number
c) Checksum
d) Both Sequence & Acknowledgment number

Question 32. **(L.O.3.1) What is the main advantage of UDP?**

a) More overload
c) Low overhead
b) Reliable
d) Fast connection

Question 33. **(L.O.3.1) Which is the correct expression for the length of UDP datagram?**

a) UDP length = IP length – IP header's length
b) UDP length = UDP length – UDP header's length
c) UDP length = IP length + IP header's length
d) UDP length = UDP length + UDP header's length

Question 34. **(L.O.3.1) In Go-Back-N window, when the timer of the packet times out, several packets have to be resent even some may have arrived safe. Whereas in Selective Repeat window, the sender resends which packets?**

a) Packets which are not lost
c) Packets from starting
b) Only those packets which are lost or corrupted
d) All the packets

Question 35. **(L.O.3.1) In the slow-start algorithm, the size of the congestion window increases _____ until it reaches a threshold.**

a) exponentially
c) multiplicatively
b) additively
d) suddenly

Question 36. **(L.O.2.2) A web cookie is a small piece of data that is _____**

a) sent from a website and stored in user's web browser while a user is browsing a website
b) sent from user and stored in the server while a user is browsing a website
c) sent from root server to all servers
d) sent from the root server to other root servers

Question 37. **(L.O.4.1) Which of the following is not applicable for the single Internet Protocol (IP)?**

a) Error reporting
c) Datagram format
b) Handle addressing conventions
d) Packet handling conventions

Question 38. **(L.O.4.1) Which field helps to check rearrangement of the fragments for an IP packet?**

a) offset
b) flag
c) TTL
d) identifier

Question 39. (L.O.4.2) Suppose two IPv6 nodes want to interoperate using IPv6 datagrams, but they are connected to each other by intervening IPv4 routers. What is the best solution used?

a) Use dual-stack approach
b) Tunneling
c) No solution
d) Replace the system

Question 40. (L.O.3.1) Which of the following is false with respect to Connectionless service of transport layer protocol?

a) Packets are not numbered
b) Packets are not delayed
c) No acknowledgement
d) Packet may arrive out of sequence

Question 41. (L.O.4.2) Internet Control Message Protocol (ICMP) has been designed to compensate what from Internet Protocol (IP)?

a) Error-reporting
b) Error-correction
c) Host and management queries
d) All of the mentioned

Question 42. (L.O.4.2) The Time-to-Live (TTL) field in IP header has value 10. How many routers (max) can process this datagram?

a) 11
b) 5
c) 10
d) 9

Question 43. (L.O.4.2) IPv6 does not use which type of address?

a) Broadcast
b) Multicast
c) Any cast
d) Unicast

Question 44. (L.O.4.2) You have an IP address of 172.16.13.5 with a 255.255.255.128 subnet mask. What is your class of address, subnet address, and broadcast address?

a) Class A, Subnet 172.16.13.0, Broadcast address 172.16.13.127
b) Class B, Subnet 172.16.13.0, Broadcast address 172.16.13.127
c) Class B, Subnet 172.16.13.0, Broadcast address 172.16.13.255
d) Class B, Subnet 172.16.0.0, Broadcast address 172.16.255.255

Question 45. (L.O.4.2) If you wanted to have 12 subnets with a Class C network ID, which subnet mask would you use?

a) 255.255.255.252
b) 255.255.255.255
c) 255.255.255.240
d) 255.255.255.248

Question 46. (L.O.4.2) Your router has the following IP address on Ethernet0: 172.16.2.1/23. Which of the following can be valid host IDs on the LAN interface attached to the router?

i. 172.16.1.100
ii. 172.16.1.198
iii. 172.16.2.255
iv. 172.16.3.0
a) i only
b) ii and iii only
c) iii and iv only
d) ii only

Question 47. (L.O.4.2) What is the maximum number of IP addresses that can be assigned to hosts on a local subnet that uses the 255.255.255.224 subnet mask?

a) 14
b) 15
c) 16
d) 30

Question 48. (L.O.4.2) You have an interface on a router with the IP address of 192.168.192.10/29. Including the router interface, how many hosts can have IP addresses on the LAN attached to the router interface?

a) 6
b) 8
c) 30
d) 32

Question 49. (L.O.4.1) Where should we use default routing?

a) On stub networks- which have only one exit path out of the network
b) Which have more than one exit path out of the network
c) Minimum five exit paths out of the network
d) Maximum five exit paths out of the network

Question 50. (L.O.4.1) What is route poisoning?

a) It sends back the protocol received from a router as a poison pill, which stops the regular updates. The use of variable length subnet masks is permitted
b) It is information received from a router that can't be sent back to the originating router.RIPv2 supports classless routing
c) It prevents regular update messages from reinstating a route that has just come up
d) It describes when a router sets the metric for a downed link to infinity

Question 51. (L.O.3.2) Which methods are commonly used in Server Socket class?

a) Public Output Stream get Output Stream ()
b) Public Socket accept ()
c) Public synchronized void close ()
d) Public void connect ()

Question 52. (L.O.3.2) Which constructor of Datagram Socket class is used to create a datagram socket and binds it with the given Port Number?

a) Datagram Socket(int port)
b) Datagram Socket(int port, Int Address address)
c) Datagram Socket()
d) Datagram Socket(int address)

Question 53. (L.O.3.2) What does the client in socket programming must know?

a) IP address of Server
b) Port number
c) Both IP address of Server & Port number
d) Only its own IP address

Question 54. (L.O.2.1) Cookies were originally designed for?

a) Client-side programming
b) Server-side programming
c) Both Client-side programming and Server-side programming
d) Socket programming

Question 55. (L.O.4.2) The computation of the shortest path in OSPF is usually done by which algorithm?

a) Bellman-ford algorithm
b) Routing information protocol
c) Dijkstra's algorithm
d) Distance vector routing

Question 56. (L.O.4.2) In OSPF, which protocol is used to discover neighbor routers automatically?

a) Link state protocol
b) Error-correction protocol
c) Routing information protocol
d) Hello protocol

Question 57. (L.O.4.2) An OSPF router receives an LSA, the router checks its sequence number, and this number matches the sequence number of the LSA that the receiving router already has. What does the receiving router do with the LSA?

a) Ignores the LSA
b) Adds it to the database
c) Sends newer LSU update to source router
d) Floods the LSA to the other routers

Question 58. (L.O.4.1) The outcome of Dijkstra's calculation is used to populate the which table?

a) Topology table
b) Routing table
c) Neighbor table
d) Adjacency table

Question 59. (L.O.2.1) MIB is a collection of groups of objects that can be managed by which protocol?

a) SMTP
b) UDP
c) SNMP
d) TCP/IP

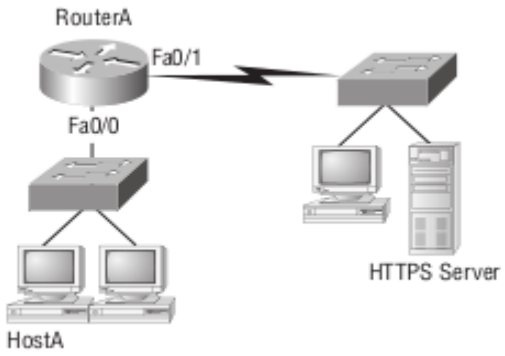
Question 60. (L.O.2.1) ICMP is used in which application?

a) Ping
b) Traceroute
c) Ifconfig
d) Both Ping & Traceroute

Question 61. ISP exchanges internet traffic between their networks by?

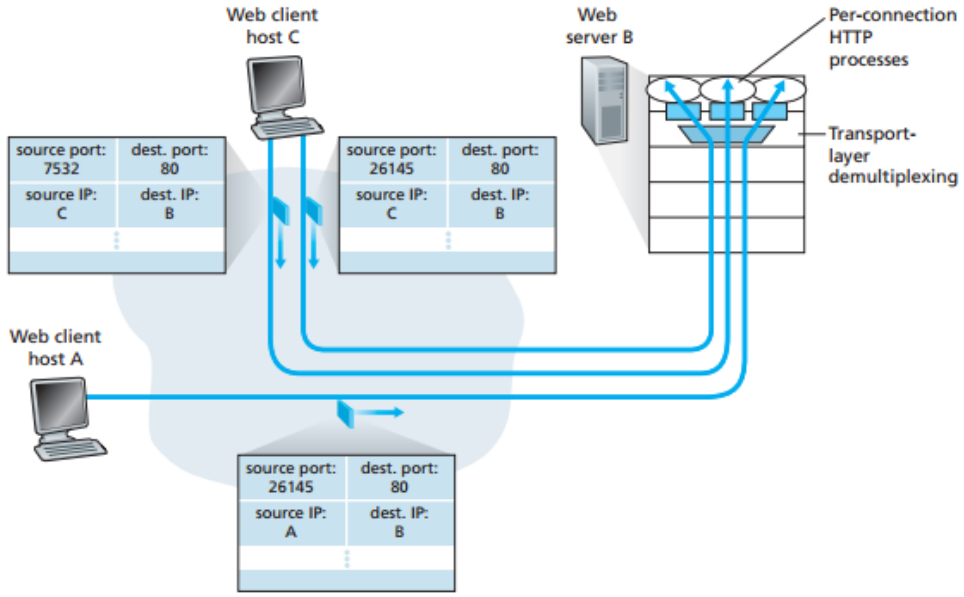
a) internet exchange point
b) subscriber end point
c) ISP end point
d) internet end point

Question 62. (L.O.1.2) Host A wants to send a request to a Web server HTTPS. Which of the followings could be the source address when the Server receives the data frame?



a) MAC address of the switch connected to host A
b) MAC address of the switch connected to Server
c) MAC address of the router A at interface Fa0/0
d) MAC address of the router A at interface Fa0/1

Question 63. (L.O.3.1) Consider the figure below. What are the source/destination port values and the source/destination IP addresses in the network-layer datagrams (carrying the transport-layer segments) flowing from the server back to the clients' processes?

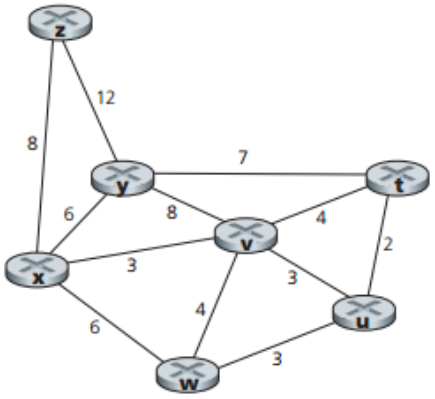


a) Source port: 80, IP Source: B; Destination port: 26145, Destination IP: A
b) Source port: 26145, IP Source: A; Destination port: 80, Destination IP: B
c) Source port 80, IP Source: A; Destination port: 26145, Destination IP: B

d) Source port 80, IP source C; Destination port: 7532, Destination IP: B

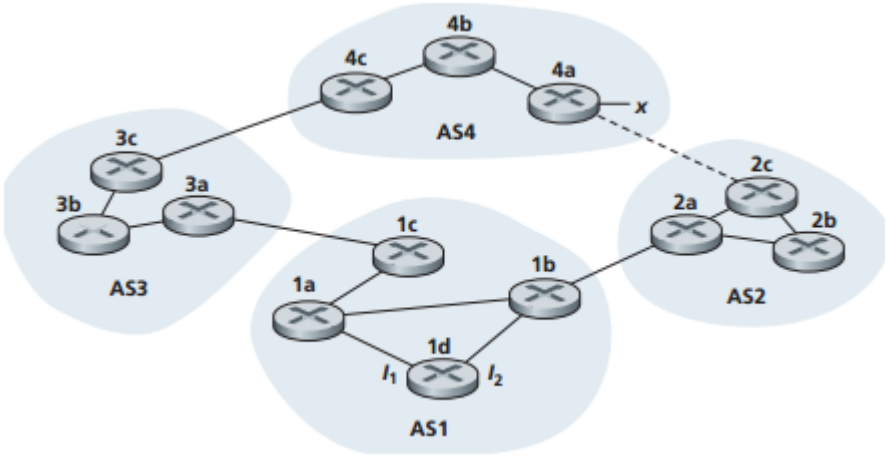
Question 64. **(L.O.4.1) Consider the following network. With the indicated link costs, what is the shortest path from z to u is found using Dijkstra's shortest-path algorithm?**

a) z -> x -> v -> u
b) z -> y -> v -> u
c) z -> x -> w -> u
d) z -> y -> t -> u



Question 65. **(L.O.4.1) Consider the network shown below. Suppose AS3 and AS2 are running OSPF for their intra-AS routing protocol. Suppose AS1 and AS4 are running RIP for their intra-AS routing protocol. Suppose eBGP and iBGP are used for the inter-AS routing protocol. Initially suppose there is no physical link between AS2 and AS4. Router 3c learns about prefix x from which routing protocol: OSPF, RIP, eBGP, or iBGP?**

a) OSPF
b) eBGP
c) iBGP
d) RIP



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