Information Systems and Networking I Examination Booklet

Contributed by:

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1. Any electronic device on a network is called a:
   (A) Node.
   (B) Hub.
   (C) Router.
   (D) Cable.

2. Which piece of equipment installs in a PC and allows the PC to connect to a network?
   (A) Hub.
   (B) Access Router.
   (C) Graphic Accelerator Card.
   (D) Network Interface Card.

3. Centralized database:
   (A) Is best for security and management.
   (B) Has all or part of the database copied at 2 or more computers.
   (C) Is dispersed among multiple computer systems.
   (D) Has problem of keeping all up to date data.

4. The disadvantage of a replicated database is:
   (A) Contention among multiple processors attempting to access data simultaneously.
   (B) Slow response time.
   (C) High storage cost.
   (D) All processors loose access to data during disk failure.

5. What requirement of distributed data processing is critical for the design and enhancement of the system?
   (A) Connectivity.
   (B) Availability.
   (C) Performance.
   (D) All of the above.

6. What is the distention address of a frame containing an ARP request?
   (A) A broadcast IP address.
   (B) A broadcast MAC address.
   (C) The default getaway IP address.
   (D) The default getaway MAC address.

7. How many bits make up an IP address?
   (A) 32 Bits.

(B) 64 Bits.
(C) 48 Bits.
(D) 8 Bits.

8. What address is an example of a broadcast address for a class B network with a default subnet mask?
(A) 147.1.1.1
(B) 147.13.0.0
(C) 147.14.255.0
(D) 147.14.255.255

9. If one is given a class C type IP address block, what is the maximum number of machines that he/she can use it for, if a unique number is allocated per machine?
(A) 512
(B) 250
(C) 254
(D) 255

10. Which of the following IP address is valid to be assigned to a host?
(A) 127.0.0.1
(B) 192.248.16.255
(C) 180.15.1.5
(D) 150.7.0.0

11. To interconnect two IP classes, Class A and Class C networks.
(A) a class B network is needed.
(B) a bridge is needed.
(C) a router is needed.
(D) a firewall is needed.

12. Which statement accurately describes the way DHCP assigns IP Address?
(A) The network administrator must re-assign a previously assigned address to the DHCP pool once a host no longer requires the address.
(B) DHCP offers a many-to-one ratio of IP addresses to users.
(C) DHCP only allows users to obtain IP addresses if users a profile in the DHCP pool.
(D) DHCP has the ability to reclaim an IP address after a host workstation releases it.

13. The Reverse Address Resolution Protocol (RARP) in the IP protocol family is used to find out which?
(A) Ethernet address corresponds to a given IP address.
(B) Subnet mask corresponds to a given Ethernet address.
(C) IP address corresponds to a given Ethernet address.
(D) IP address corresponds to a given NetBIOS name.

14. Which of the following is/are correct regarding TCP and UDP protocols?
(A) UDP is a connectionless end-to-end protocol.

(B) TCP is not a connection-oriented end-to-end protocol.
(C) TCP is a connectionless end-to-end protocol.
(D) UDP uses a three-way handshaking to establish a connection.

15. Which of the following protocols use the layer 4 UDP protocol?
(A) SMTP.
(B) SNMP.
(C) FTP.
(D) DNS.

16. Which of the following is a feature of TCP?
(A) Exchange the diagram without acknowledgments.
(B) Error processing handled through other protocols.
(C) Connectionless.
(D) Windowing.

17. What are the primary functions of TCP?
(A) Establishment of physical connections between endpoints.
(B) Reliability and flow control.
(C) Unreliable transport and buffers.
(D) Connectionless best effort delivery.

18. What is the purpose of the TCP three-way handshake?
(A) To adjust the size of the sliding window.
(B) To verify the source and destination IP addresses.
(C) To determine the number of bytes that will be included in each segment.
(D) To synchronize sequence numbers prior to data transmission.

19. TCP is a connection-oriented protocol. Which correctly describes TCP?
(A) Data is sent using best-effort delivery.
(B) Data is sent after a virtual connection is established at both ends.
(C) Data is sent as soon as it is requested using the best means possible.
(D) Data is sent in hexadecimal 1s and 0s.

20. Why are the pairs of wires twisted together in UTP cable?
(A) Twisting the wires makes six pairs fit in the space of four pairs.
(B) Twisting the wires makes it less expensive.
(C) Twisting the wires makes it less thinner.
(D) Twisting the wires reduces noise problem.

21. What is required for electrons to flow?
(A) A closed loop of conductors.
(B) An open loop of insulator.
(C) A closed loop of insulator.
(D) An open loop of conductors.

22. How does using a hub or repeater affect the size of a collision domain?
(A) It reduces it.
(B) It enlarger it.
(C) It eliminates it.
(D) It has no affect it.

23. Which of the following will cause a collision on an Ethernet network?
(A) Two nodes having the same MAC address.
(B) Two or more nodes transmitting at the same time.
(C) Non-OSI compliant protocols running on the network.
(D) Multiple routed protocols running on the same network.

24. Which of the following statements regarding switches is correct?
(A) Switches encapsulate segments into packets.
(B) Switches regulate traffic based on layer 1 addressing.
(C) Switches designed for Token Ring networks are known MAUs.
(D) Switches combine the connectivity of a hub with the traffic regulation of a bridge.

25. Which of the following is used to describe the rated throughput capacity of a given network medium?
(A) Bandwidth.
(B) Base band.
(C) Delay.
(D) Latency.

26. Which of the following describe a LAN?
(A) A network that covers a larger area than a WAN.
(B) A network that connect workstations, terminals, and other devices in a large metropolitan area.
(C) A network that connect workstations, switches, and other devices in a geographically limited area.
(D) A network that serves users across a geographically large area and often uses transmission devices provided by a common carrier.

27. What is the purpose of VPN?
(A) Faster public access.
(B) Connection to a private network through the internet.
(C) Insecure connection.
(D) Connection to the internet through a private network.

28. Why was the OSI model created?
(A) To ensure the secrecy of proprietary networking technologies.
(B) To ensure that networks are compatible with each other.
(C) To slow down the expansion of new technologies.
(D) To ensure that network administrators receive a high salary to decipher networks.

29. The layers of the OSI model from the lower layer to the upper layer in the order specified are
    (A) Physical, Data link, Transport, Network, Session, Presentation, Application.
    (B) Physical, Data link, Network, Transport, Presentation, Session, Application.
    (C) Physical, Data link, Transport, Network, Presentation, Session, Application.
    (D) Physical, Data link, Network, Transport, Session, Presentation, Application.
30. Which is the correct statement with respect to ISO/OSI and TCP/IP models?
    (A) OSI reference model implementation was made operational before TCP/IP.
    (B) Both have the same number of layers.
    (C) The network layer of the OSI model allows higher functionality than the IP layer of the TCP/IP model.
    (D) Popular network applications are mostly based on the OSI protocol model.

31. Which of the following statements is correct with respect to fiber optic cables?
    (A) They are not suitable for short distance connections.
    (B) In multimode fibres, the transmitted light beam is 'bounced' off the cladding as it travels down the core.
    (C) Data transmitted over fibre is susceptible for electromagnetic interferences.
    (D) Single mode fibres have not a higher bandwidth than multimode fibres.

32. Two workstations A and B each have an RJ45 port need to be connected to a 10Base T network hub having RJ45 ports. The distance from A to hub is 75 meters and from B to hub is 160 meters. What would be the acceptable way to implement this connectivity requirement?
    (A) Co-axial cable to A and wire-less link to B.
    (B) UTP cables to A and B.
    (C) UTP cable to A and fibre cable to B with media converters.
    (D) UTP cable to A and wire-less link to B.

33. Which of the following is correct regarding Token Ring networks?
    (A) Whenever a network node wishes to send a frame, it has to wait for the free token to arrive.
    (B) The IEEE 802.6 specifies the token ring MAC protocol.
    (C) After initialisation of a token ring network, a token can be transmitted in both directions of the network.
    (D) A token ring with a shielded twisted pair transmission medium can have a minimum data rate of 16Mbps.

34. Which of the following is correct with regard to Frame Relay?
    (A) Allows the use of variable length packets.
    (B) Performs extensive error checking.
    (C) Acknowledges each frame transmitted.
    (D) Can be considered as a broadband packet switching technology.

35. Network bridges can be used to
    (A) Secure the organizational network from intruders.
    (B) Interconnect different kinds of network topologies.

(C) Handle congestion.
(D) Control data flow.

36. In asynchronous data transmission.
(A) Each character/byte is encapsulated within a start bit and a parity bit.
(B) Each character/byte is encapsulated within a start bit and one or more stop bits.
(C) No communication control characters are used.
(D) Start bit is essential but the stop bit(s) is/are optional for each transmitted character/byte.

37. Which of the following statements is correct with regard to Time Division Multiplexing?
(A) Statistical TDM can not makes efficient use of the bandwidth if the data stream is probabilistic.
(B) TDM requires the transmitter and receiver to be synchronized periodically.
(C) TDM performs efficiently if the data stream is probabilistic.
(D) Statistical TDM is efficient if the data stream is deterministic.

38. Which of the following error correction methods can be successfully employed on a simplex communication line?
(A) A Cyclic Redundancy Check (CRC) code.
(B) A Hamming code.
(C) A RSA code.
(D) A Huffman code.

39. On a full duplex data link, the most widely used error recovery technique is
(A) Backward Error Correction (BEC).
(B) Forward Error Correction (FEC).
(C) Automatic Repeat Request (ARQ).
(D) Huffman error correction technique.

40. Which of the following statements is correct with regard to Asymmetric Digital Subscriber Line (ADSL) technology?
(A) ADSL has two different data rates, one for incoming and another for outgoing connections.
(B) ADSL is a 64 Kbps leased line.
(C) ADSL needs special cabling infrastructure.
(D) The same domestic telephone connection can not be shared for normal telephony as well as for ADSL.

41-what do WANs do

a. operate over a large area
b. provide full and part time connectivity
c. interconnect LANs
d. <u>all of the above</u>

42-what is the decimal number 151 in binary?

e. 10010011
f. 10101011
g. <u>10010111</u>
h. 10100111

43-what is the binary number 11011010 in decimal?

i. 186
j. 222
k. 202
l. <u>218</u>

44-bandwidth is described in

m. centimeters.
n. Megabits
o. <u>Bits per second</u>
p. Bytes per second

45-which of the following is the PDU for the transport layer?

q. <u>segment</u>
r. Packet
s. Segments
t. Frame

46-which layer of the OSI model provides connectivity and selection between two end systems where routing occurs?

u. transport layer
v. <u>network layer</u>
w. data link layer
x. physical layer

47- packets are encapsulated in frames at which layer of the OSI model?

a. session
b. Transport
c. Network
d. <u>Data link</u>

48- a hub is an OSI layer --------- device

a. six
b. four
c. Two
d. <u>one</u>

49- what do routers connect?

a. Hubs and nodes
b. <u>Two or more networks</u>
c. Bridges and hubs
d. Bridges and repeaters

50- What does a router route

a. layer 4 segment
b. layer 3 packets
c. layer 2 frames
d. layer 1 bits

51- what is the correct order of encapsulation?
a. Data, segment, packet, frame, bits
b. Data, frame, packet, segment, bits
c. Bits, data, packet, frame
d. Bits, frame, data, packet

52- where is the safety ground connected for computer?
a. Exposed metal parts
b. The monitor
c. The mouse
d. The network connection

53- What is called when two bits from two different communicating computers are on a shared-medium at the same time?
a. Latency
b. Dispersion
c. collision
d. Obstruction

54-The network area within which data packets originate and collide is called a ----------?
a. Network segment
b. Collision segment
c. Network domain
d. Collision domain

55- What is anther name for a rollover cable?
a. An inverted cable
b. A console cable
c. A cross connect cable
d. A patch cable

56-Which best describes collision in Ethernet network?
a. The result of having non OSI compliant protocols on the network
b. The effect when two nodes have the same MAC address
c. The result of two nodes transmitting at the same time
d. The effects of having too many repeaters in a network

57- Which best describes an extended star topology?
a. LAN topology where central points on a network are connected to a common central switch by liner links
b. LAN topology where a central hub is connected by vertical cabling to other hubs
c. A and b
d. None of the above

58-Convert the decimal number 24032 to hex?
a. ABCD
b. ADE3

c. 6DE0
d. 5DE0

59-Convert the hex number 3F4B to a decimal number?
a. 26203
b. 16204
c. 16203
d. 12345

60- a frame is a _____
a. layer 2 PDU
b. layer 3 PDU
c. an encapsulated packet
d. both a and c

61- which of the following describe Token-Ring?
a. Data transfer rates of 4 mbps or 16 mbps
b. can physically use a star topology
c. can only be implemented with fiber
d. both a and b

62- how does a token ring topology differ from an Ethernet topology?
a. token ring is deterministic
b. token ring networks do not face problems with collisions
c. neither a or b
d. both a and b

63- one of the primary reasons FDDI is extremely reliable is because_____?
a. of its dual ring design
b. it is a CSMA/CD network
c. stations are guaranteed their turn to transmit
d. both a and c

64- if you have to connect a FDDI between buildings, which mode of fiber would you use
a. inter mode
b. intra mode
c. multi mode
d. single mode

65- which of the following is an accurate description of an Ethernet variety?
a. 10Base-T uses cat5 cable and transmits at 10 Mbps
b. 100Base-Fx is multi-mode fiber that transmits at 10 Mbps
c. both a and b are correct
d. none of the above

66- where should the main distribution facility (MDF) be located if a LAN with an extended star typology is used in a multi-story building?
a. next to the POP.
b. on the first floor
c. on one of the middle floors
d. in the basement

67- what type of cabling provides interconnections between wiring closets, wiring closets and POP, and between buildings that are part of the same LAN?
a. token ring cabling.

b. backbone cabling.
c. coaxial cabling
d. horizontal cabling.

68- what is the one-hand rule?
a. only touch devices with one hand so any electrical current will not flow through the heart
b. when setting up the network only use one bare hand-always wear a glove on at least one hand.
c. a & b
d. none of the above

69- what is the maximum distance backbone cabling if a single-mode, fiber optic cable is used to connect the horizontal cross-connect to the main cross-connect?
a. 500 meters
b. 1000 meters
c. 2500 meters
d. 3000 meters

70- which address is an example of a broadcast address for a class B network?
a. 123.255.255.255
b. 123.14.2555.255
c. 123.13.0.0
d. 123.1.1.1

71. how many host addresses are available to a class C network?
a. 254
b. 255
c. 256
d. none of the above

72. how many subnets can a class C network use?
a. 245
b. 26
c. 256
d. none of the above

73. how many bits can be borrowed to created a subnet for a class C network?
a. 2
b. 4
c. 6
d. 8

74. for what purpose does the router "AND" the subnet mask to the destination address?
a. to derive the host numbers so it knows where to sent the packet
b. to derive subnet mask and compare it with information in routing table
c. to derive which network and subnet to sent the packet to
d. none of the above

75. with a class C of 197.15.22.31 and a subnet mask of 255.255.255.224, how many bits have been borrowed to created a subnet?

a. 1
b. 2
c. 3
d. none of the above

76. what is the minimum number of bits can be borrowed to form a subnet?

a. 1
b. 2
c. 4
d. none of the above