CWIPEDIA.IN

Department Of Computer Engineering

22414 Data Communication and Computer Network (DCC) MCQ

4th SEM All Subjects MCQs: click here

Part-1

1. FDDI is a

A. ring network

B. star network

C. mesh network

D. bus based network

E. None of the above

Answer: A

2. An anticipated result from multiprogramming operations is: A. reduced computer idle time

B. the handling of more jobs

C. better scheduling of work

D. All of the above

E. None of the above

Answer: D

3. A central computer surrounded by one or more satellite computers is called a A. bus network

B. ring network

C. star network

D. All of the above

E. None of the above

Answer: C

4. If delays are recorded as 10 bit numbers in a 50 router network, and delay vectors are exchanged twice a second, how much bandwidth per fill duplex line is occupied by the distributed routing algorithm?

A. 500 bps

B. 1500 bps

C. 5 bps

D. 1000 bps

Answer: D

5. HOSTS file entries are limited to how many characters?

A. 8

B. 255

C. 500

D. Unlimited

E. None of the above

Answer: B

6. Demodulation is the process of

A. converting digital signals to analog signals

B. converting analog signals to digital signals

C. combining many low speed channels into one high speed channel D. dividing the high-speed signals into frequency bands

E. None of the above

Answer: B

7. Which of the following statement is incorrect?

A. The Addresses Resolution Protocol, ARP, allows a host to find the physical address of a target host on the same physical network, given only the target IP address.

B. The sender's IP - to- physical address binding is included in every ARP broadcast; receivers update the IP-to-Physical address binding information in their cache before processing an ARP packet.

C. ARP is a low-level protocol that hides the underlying network physical addressing, permitting us to assign IP-addresses of our choice to every machine.

D. All of the above

E. None of the above

Answer: D

8. You are working with a network that has the network ID 192.168.10.0. What subnet should you use that supports up to 25 hosts and a maximum number of subnets?

A. 255.255.255.192

B. 255.255.255.224

C. 255.255.255.240

D. 255.255.255.248

E. 255.255.255.252

Answer: B

9. Which of the following best illustrates the default subnet mask for a class A,B, and C Network?

A. 0.0.0.0, 0.0.0.1, 0.0.1.1

B. 255.255.255.0, 255.255.0.0, 255.0.0.0

C. 255.0.0.0, 255.255.0.0, 255.255.255.0

D. 255.255.0.0, 255.255.255.0, 255.255.255.255

E. None of the above

Answer: C

10. Modulation is the process of

A. converting analog signals to digital signals

B. converting digital signals to analog signals

C. Multiplexing various signals into high speed line signals

D. performing data encryption.

Answer: B

11. Devices interconnected by the LAN should include

A. Computers and terminals

B. mass storage device, printers and plotters

C. bridges and gateways

D. All of the above

E. None of the above

Answer: D

12. What are the data transmission channels available for carrying data from one location to another?

A. Narrowband

B. Voice band

C. Broadband

D. All of the above

E. None of the above

Answer: D

13. On a class B network, how many hosts are available at each site with a subnet mask of 248?

A. 16,382

B. 8,190

C. 4,094

D. 2,046

E. 1,022

Answer: D

14. Which of the following technique is used for encapsulation?

A. a technique used in best-effort delivery systems to avoid endlessly looping packets.

B. a technique used by protocols in which a lower level protocol accepts a message from a higher level protocol and places it in the data portion of the low level frame.

C. One of the pieces that results when an IP gateway divides an IP datagram into smaller pieces for transmission across a network that cannot handle the original datagram size

D. All of the above

E. None of the above

Answer: B

15. You are working with three networks that have the network IDs 192.168.5.0, 192.168.6.0, and 192.168.7.0. What subnet mask can you use to combine these addresses into one?

A. 255.255.252.0

B. 225.255.254.0

C. 255.255.255.240

D. 255.255.255.252

Answer: A

16. With an IP address set starting with 150, you currently have six offices that you are treating as subnets. Plans are in place to open 10 more offices before the end of the year. What subnet mask should you use to satisfy the needed number of subnets and maximize the number of hosts available at each site?

A. 192

B. 224

C. 240

D. 248

E. 252

Answer: D

17. A machine that connects to two or more electronic mail systems and transfers mail messages among them is known as

A. Gateways

B. mail gateway

C. bridges

D. User Agent

E. None of the above

Answer: B

18. If digital data rate of 9600 bps is encoded using 8-level phase shift keying (PSK) method, the

modulation rate is

A. 1200 bands

B. 3200 bands

C. 4800 bands

D. 9600 bands

E. None of the above

Answer: B

19. Error detection at a data link level is achieved by

A. bit stuffing

B. cyclic redundancy codes

C. Hamming codes

D. equalization

Answer: B

20. When the computer provides the manager with a multiple choice of possible answers, the prompting technique is

A. question and answer

B. form filling

C. open-ended question

D. menu selection

E. None of the above

Answer: D

21. Which network topology is considered passive?

A. Cross

B. Ring

C. Star

D. Mesh

E. Bus

Answer: E

22. If a firm wanted to transmit data from 1,000 punched cards to a remote computer, they would use a(n)

A. POS terminal

B. data collection terminal

C. batch processing terminal

D. intelligent terminal

E. None of the above

Answer: C

23. Which address is the loopback address?

A. 0.0.0.1

B. 127.0.0.0

C. 127.0.0.1

D. 255.255.255.255

E. None of the above

Answer: C

24. Error rate is

A. an error-detecting code based on a summation operation performed on the bits to be checked.

B. a check bit appended to an array of binary digits to make the sum of all the binary digits.

C. a code in which each expression conforms to specific rules of construction, so that if certain errors occur in an expression, the resulting expression will not conform to the rules of construction and thus the presence of the errors is detected.

D. the ratio of the number of data units in error to the total number of data units E. None of the above

Answer: D

25. Intranets and extranets can use their network fire walls and other security features to establish secure Internet links within an enterprise or with its trading partners. Select the best fit for answer:

A. Network Server

B. Virtual Private Network

C. Network operating system

D. OSI

Answer: B

Part-2

1. Which of the following refers to the terms "residual error rate"?

A. the number of bit errors per twenty four hours of continuous operation on an asynchronous line

B. The probability that one or more errors will be undetected when an error detection scheme is used

C. the probability that one or more errors will be detected when an error detection mechanism is used

D. signal to noise ratio divided by the ratio of energy per bit to noise per hertz

E. None of the above

Answer: B

2. Which of the following summation operations is performed on the bits to check an error detecting code?

A. Codec

B. Coder-decoder

C. Checksum

D. Attenuation

Answer: C

3. The research and development department at your office has been experimenting with different technologies to help improve the performance of the network. One group has been examining the use of a broadband network versus a based band network. Select the correct statement about broadband and baseband.

A. Broadband networks carry several channels on a single cable, whereas in a baseband network several cables carry one channel

B. Baseband networks carry a single channel on a single cable, whereas broadband networks carry several channels on a single cable

C. Baseband refers to local area networks, and broadband refers to wide area networks.

D. Baseband operates at a standard bit rate, whereas broadband may operate at different rates as needed

E. Broadband and baseband refer to the different frequencies at which infrared operates then transmitting signals in certain conditions

Answer: B

4. An error-detecting code inserted as a field in a block of data to be transmitted is known as

A. Frame check sequence

B. Error detecting code

C. Checksum

D. flow control

E. None of the above

Answer: A

5. The cheapest modems can transmit

A. 300 bits per second

B. 1,200 bits per second

C. 2,400 bits per second

D. 4,800 bits per second

E. None of the above

Answer: A

6. Computers cannot communicate with each other directly over telephone lines because they use digital pulses whereas telephone lines use analog sound frequencies. What is the name of the device which permits digital to analog conversion at the start of a long distance transmission?

A. Interface

B. Modem

C. Attenuation

D. Teleprocessor

E. None of the above

Answer: B

7. What is the usual number of bits transmitted simultaneously in parallel data transmission used by microcomputers?

A. 16

B. 9

C. 8

D. 4

E. None of the above

Answer: B

8. The receive equalizer reduces delay distortions using a

A. tapped delay lines

B. gearshift

C. descrambler

D. difference engine

E. None of the above

Answer: A

9. Four routers have to be interconnected in a point-to-point Network. Each pair of root us may connect by a high-speed line, a medium speed line or a low speed line. Find the total number of topologies.

A. 12

B. 81

C. 48

D. 729

Answer: D

10. A network consists of eight NT servers. You are planning to move servers to different segments of your network, what utility should be used at each server to determine which server generates the most traffic?

A. NBTSTAT

B. NETSTAT.EXE

C. Performance Monitor

D. Network Monitor

E. ARP.EXE

Answer: D

11. Sending a file from your personal computer's primary memory or disk to another computer is called

A. uploading

B. downloading

C. logging on

D. hang on

E. None of the above

Answer: A

12. What is the name of the software package that allows people to send electronic mail along a network of computers and workstations?

A. Memory resident package

B. Project management package

C. Data communication package

D. Electronic mail package

E. None of the above

Answer: C

13. The communication mode that supports two-way traffic but only one direction at a time is

A. simplex

B. duplex

C. half duplex

D. multiplex

E. None of the above

Answer: C

14. HMP (Host Monitoring Protocol) is:

A. a TCP/IP protocol used to dynamically bind a high level IP Address to a low-level physical hardware address

B. a TCP/IP high level protocol for transferring files from one machine to another. C. a protocol used to monitor computers

D. a protocol that handles error and control messages

E. None of the above

Answer: C

15. Which of the following is a voice band channel?

A. Telephone line

B. Telegraph line

C. Coaxial cable

D. Microwave systems

E. None of the above

Answer: A

16. A 8-Mbps token ring has a token holding timer value of 10 msec. What is the longest frame (assume header bits are negligible) that can be sent on this ring?

A. 8000 B frame

B. 80,000 B frame

C. 8 x 105 bit frame

D. 10,000 B frame

Answer: D

17. Data are sent over pin _____ of the EIA-232 interface.

A. 2

B. 3

C. 4

D. All of the above

Answer: A

18. To connect a computer with a device in the same room, you might be likely to use A. a coaxial cable

B. a dedicated line

C. a ground station

D. All of the above

Answer: A

19. Demodulation is a process of

A. converting analog to digital signals

B. converting digital to analog signals

C. multiplexing various signals into one high speed line signals D.
performing data description.

Answer: A

20. Internet-like networks between a company and its business partners. Select the best fit for answer:

A. Bandwidth alternatives

B. Switching alternating

C. Inter organizational networks

D. Extranets

Answer: D

21. An example of an analog communication method is

A. laser beam

B. microwave

C. voice grade telephone line

D. All of the above

E. None of the above

Answer: D

22. Which of the following layer protocols are responsible for user and the application programme support such as passwords, resource sharing, file transfer and network management?

A. Layer 7 protocols

B. Layer 6 protocols

C. Layer 5 protocols

D. Layer 4 protocols

E. None of the above

Answer: A

23. What frequency range is used for FM radio transmission? A. Very Low Frequency : 3 kHz to 30. kHz

B. Low Frequency : 30 kHz to 300 kHz

C. High Frequency : 3 MHz to 30 MHz

D. Very High Frequency : 30 MHz to 300 MHz

E. None of the above

Answer: D

24. Transmission of computerized data from one location to another is called A. data transfer

B. data flow

C. data communication

D. data management

E. None of the above

Answer: C

25. Compared to analog signals, digital signals

A. allow faster transmission

B. are more accurate

C. both (a) and (b)

D. All of the above

E. None of the above

Answer: C

Part-3

1. ICMP (Internet Control Message Protocol) is

A. a TCP/IP protocol used to dynamically bind a high level IP Address to a low-level physical hardware address

B. a TCP/IP high level protocol for transferring files from one machine to another C. a protocol used to monitor computers

D. a protocol that handles error and control messages

E. None of the above

Answer: D

2. If you get both local and remote echoes, every character you type will appear on the screen

A. once

B. twice

C. three times

D. never

E. None of the above

Answer: B

3. What part of 192.168.10.51 is the Network ID, assuming a default subnet mask? A. 192

B. 192.168.10

C. 0.0.0.5

D. 51

E. None of the above

Answer: B

4. The slowest transmission speeds are those of

A. twisted-pair wire

B. coaxial cable

C. fiber-optic cable

D. microwaves

Answer: A

5. A noiseless 3 KHz Channel transmits bits with binary level signals. What is the maximum data rate?

A. 3 Kbps

B. 6 Kbps

C. 12 Kbps

D. 24 Kbps.

Answer: B

6. Carrier is

A. One or more conductors that serve as a common connection for a related group of devices

B. a continuous frequency capable of being modulated or impressed with a second signal

C. the condition when two or more sections attempt to use the same channel at the same time

D. a collection of interconnected functional units that provides a data communications service among stations attached to the network

E. None of the above

Answer: B

7. What can greatly reduce TCP/IP configuration problems?

A. WINS Server

B. WINS Proxy

C. DHCP Server

D. PDC

E. None of the above

Answer: C

8. In CRC there is no error if the remainder at the receiver is _____.

A. equal to the remainder at the sender

B. zero

C. nonzero

D. the quotient at the sender

Answer: B

9. Which of the following statements is correct for the use of packet switching?

A. the subdivision of information into individually addressed packets in conjunction with alternative routing arrangement enabled the transmission path to be altered in the event of congestion or individual link failure

B. the employment of additional intelligence within the network enabled more sophisticated error control and link control procedures to be applied

C. by employing wide bandwidth circuits for the trunk networks substantial economies through extensive sharing of capacity could be achieved.

D. All of the above

E. None of the above

Answer: D

10. A front-end processor is

A. a user computer system

B. a processor in a large-scale computer that executes operating system instructions

C. a minicomputer that relieves main-frame computers at a computer centre of communications control functions

D. preliminary processor of batch jobs.

E. None of the above

Answer: C

11. What is the port number for NNTP?

A. 119

B. 80

C. 79

D. 70

Answer: A

12. Eight stations are competing for the use of a shared channel using the 'Adaptive tree Walk Protocol'. If the stations 7 and 8 are suddenly become ready at once, how many bit slots are needed to resolve the contention?

A. 7 slots

B. 5 slots

C. 10 slots

D. 14 slots

Answer: A

13. Usually, it takes 10-bits to represent one character. How many characters can be transmitted at a speed of 1200 BPS?

A. 10

B. 12

C. 120

D. 1200

E. None of the above

Answer: C

14. To connect a computer with a device in the same room, you might be likely to use A. a coaxial cable

B. a dedicated line

C. a ground station

D. All of the above

E. None of the above

Answer: A

15. Internet-like networks within an enterprise.

A. Intranets

B. Switching alternating

C. Inter organizational networks

D. Extranets

Answer: A

16. How many bits internet address is assigned to each host on a TCP/IP internet which is used in all communications with the host?

A. 16 - bits

B. 32 - bits

C. 48 - bits

D. 64 - bits

E. None of the above

Answer: B

17. With an IP address of 100, you currently have 80 subnets. What subnet mask should you use to maximize the number of available hosts?

A. 192

B. 224

C. 240

D. 248

E. 252

Answer: E

18. Which of the following types of channels moves data relatively slowly? A. wideband channel

B. voice band channel

C. narrowband channel

D. broadband channel

E. None of the above

Answer: C

19. Which of the following is required to communicate between two computers? A. communications software

B. protocol

C. communications hardware

D. access to transmission medium

E. All of the above

Answer: E

20. Which of the following does not allow multiple users or devices to share one communications line?

A. doubleplexer

B. multipplexer

C. concentrator

D. controller

E. None of the above

Answer: A

21. The geostationary satellite used for communication systems

A. rotates with the earth

B. remains stationary relative to the earth

C. is positioned over equator

D. All of the above

E. None of the above

Answer: D

22. Telecommunication networks frequently interconnect an organization with its customers and suppliers. Select the best fit for answer:

A. Bandwidth alternatives

B. Switching alternating

C. Inter organizational networks

D. Extranets

Answer: C

23. The packets switching concept was first proposed

A. in the late 1980s for the Defense Ministry of US.

B. in the early 1960s for military communication systems, mainly to handle speech C. in the late 1950s for Defense Ministry of US

D. All of the above

E. None of the above

Answer: B

24. The _____ houses the switches in token ring.

A. transceiver

B. nine-pin connector

C. MAU

D. NIC

E. None of the above

Answer: C

25. What device separates a single network into two segments but lets the two segments appear as one to higher protocols?

A. Switch

B. Bridge

C. Gateway

D. Router

Answer: B

Part-4

1. How many digits of the DNIC (Data Network Identification Code) identify the country? A. first three

B. first four

C. first five

D. first six

E. None of the above

Answer: A

2. A station in a network forwards incoming packets by placing them on its shortest output queue. What routing algorithm is being used?

A. hot potato routing

B. flooding

C. static routing

D. delta routing

E. None of the above

Answer: A

3. The probability that a single bit will be in error on a typical public telephone line using 4800 bps modem is 10 to the power -3. If no error detection mechanism is used, the residual error rate for a communication line using 9-bit frames is approximately equal to

A. 0.003

B. 0.009

C. 0.991

D. 0.999

E. None of the above

Answer: B

4. Frames from one LAN can be transmitted to another LAN via the device A.
Router

B. Bridge

C. Repeater

D. Modem

Answer: B

5. Which of the following condition is used to transmit two packets over a medium at the same time?

A. Contention

B. Collision

C. Synchronous

D. Asynchronous

E. None of the above

Answer: B

6. You have a class A network address 10.0.0.0 with 40 subnets, but are required to add 60 new subnets very soon. You would like to still allow for the largest possible number of host IDs per subnet. Which subnet mask should you assign?

A. 255.240.0.0

B. 255.248.0.0

C. 255.252.0.0

D. 255.254.0.0

E. 255.255.255.255

Answer: D

7. What are the most commonly used transmission speeds in BPS used in data communication?

A. 300

B. 1200

C. 2400

D. 9600

E. None of the above

Answer: D

8. What is the default subnet mask for a class C network? A. 127.0.0.1

B. 255.0.0.0

C. 255.255.0.0

D. 255.255.255.0

E. None of the above

Answer: D

9. Which of the following is used for modulation and demodulation? A. modem

B. protocols

C. gateway

D. multiplexer

E. None of the above

Answer: A

10. Which of the following is not a disadvantage of wireless LAN? A. Slower data transmission

B. higher error rate

C. interference of transmissions from different computers D. All of the above

Answer: D

11. The Internet Control Message Protocol (ICMP)

A. allows gateways to send error a control messages to other gateways or hosts

B. provides communication between the Internet Protocol Software on one machine and the Internet Protocol Software on another

C. reports error conditions to the original source, the source must relate errors to individual application programs and take action to correct the problem

D. All of the above

E. None of the above

Answer: D

12. Your company has a LAN in its downtown office and has now set up a LAN in the manufacturing plant in the suburbs. To enable everyone to share data and resources between the two LANs, what type of device(s) are needed to connect them? Choose the most correct answer.

A. Modem

B. Cable

C. Hub

D. Router

Answer: D

13. The term 'duplex' refers to the ability of the data receiving stations to echo back a confirming message to the sender. In full duplex data transmission, both the sender and the receiver

A. cannot talk at once

B. can receive and send data simultaneously

C. can send or receive data one at a time

D. can do one way data transmission only

E. None of the above

Answer: B

14. How many hosts are attached to each of the local area networks at your site? A. 128
B. 254

C. 256

D. 64

E. None of the above

Answer: B

15. Which of the following technique is used for fragment?

A. a technique used in best-effort delivery systems to avoid endlessly looping packets

B. a technique used by protocols in which a lower level protocol accepts a message from a higher level protocol and places it in the data portion of the low level frame

C. one of the pieces that results when an IP gateway divides an IP datagram into smaller pieces for transmission across a network that cannot handle the original datagram size

D. All of the above

E. None of the above

Answer: C

16. Contention is

A. One or more conductors that serve as a common connection for a related group of devices

B. a continuous frequency capable of being modulated or impressed with a second signal

C. the condition when two or more stations attempt to use the same channel at the same time

D. a collection of interconnected functional units that provides a data communications service among stations attached to the network

E. None of the above

Answer: C

17. Avalanche photodiode receivers can detect hits of transmitted data by receiving A. 100 photons

B. 200 photons

C. 300 photons

D. 400 photons

E. None of the above

Answer: B

18. Satellite-Switched Time-Division Multiple Access (SS/TDMA) is

A. the method of determining which device has access to the transmission medium at any time.

B. a medium access control technique for multiple access transmission media

C. a form of TDMA in which circuit switching is used to dynamically change the channel assignments

D. All of the above

E. None of the above

Answer: C

19. When you ping the loopback address, a packet is sent where?

A. On the network

B. Down through the layers of the IP architecture and then up the layers again C. Across the wire

D. through the loopback dongle

E. None of the above

Answer: B

20. Which of the following TCP/IP protocol is used for transferring electronic mail messages from one machine to another?

A. FTP

B. SNMP

C. SMTP

D. RPC

E. None of the above

Answer: C

21. Which of the following device is used to connect two systems, especially if the systems use different protocols?

A. hub

B. bridge

C. gateway

D. repeater

E. None of the above

Answer: C

22. The synchronous modems are more costly than the asynchronous modems because A. they

produce large volume of data

B. they contain clock recovery circuits

C. they transmit the data with stop and start bits.

D. they operate with a larger bandwidth

E. None of the above

Answer: B

23. A distributed network configuration in which all data/information pass through a central computer is

A. bus network

B. star network

C. ring network

D. Point-to-point network

E. None of the above

Answer: B

24. Which of the following TCP/IP protocol allows an application program on one machine to send a datagram to an application program on another machine?

A. UDP

B. VMTP

C. X.25

D. SMTP

E. None of the above

Answer: A

25. A remote batch-processing operation in which data is solely input to a central computer would require a:

A. telegraph line

B. simplex lines

C. mixed-band channel

D. All the above

E. None of the above

Answer: B

Part-5

1. In _____ delivery, both the deliverer of the IP packet and the destination are on the same network.

A) a connectionless

B) a direct

C) an indirect

D) none of the above

2. In _____ delivery, the deliverer of the IP packet and the destination are on different networks.

A) a connection-oriented

B) a direct

C) an indirect

D) none of the above

3. In _____ forwarding, the full IP address of a destination is given in the routing table. A) next-hop

B) network-specific

C) host-specific

D) default

4. In _____ forwarding, the mask and destination addresses are both 0.0.0.0 in the routing table.

A) next-hop

B) network-specific

C) host-specific

D) default

5. In _____ forwarding, the destination address is a network address in the routing table. A) next-hop

B) network-specific

C) host-specific

D) default

6. In _____ forwarding, the routing table holds the address of just the next hop instead of complete route information.

A) next-hop

B) network-specific

C) host-specific

D) default

7. The idea of address aggregation was designed to alleviate the increase in routing table entries when using _____.

A) classful addressing

B) classless addressing

C) both a and b

D) none of the above

8. The principle of _____ states that the routing table is sorted from the longest mask to the shortest mask.

A) first mask matching

B) shortest mask matching

C) longest mask matching

D) none of the above

9. The use of hierarchy in routing tables can _____ the size of the routing tables. A) reduce

B) increase

C) both a and b

D) none of the above

10. _____ deals with the issues of creating and maintaining routing tables. A) Forwarding

B) Routing

C) Directing

D) None of the above

11. A _____ routing table contains information entered manually.

A) static

B) dynamic

C) hierarchical

D) none of the above

12. A _____ routing table is updated periodically using one of the dynamic routing protocols.

A) static

B) dynamic

C) hierarchical

D) none of the above

13. The input and output ports of a router perform the _____ layer functions of the router.

A) physical and data link

B) network

C) transport

D) none of the above

14. The routing processor of a router performs the _____ layer functions of the router. A) physical and data link

B) network

C) transport

D) none of the above

15. The task of moving the packet from the input queue to the output queue in a router is done by _____.

A) input and output ports

B) routing processor

C) switching fabrics

D) none of the above

16. A static table is one _____.

A) with manual entries

B) which is updated automatically

C) either a or b

D) none of the above

17. A dynamic table is one _____.

A) with manual entries

B) which is updated automatically

C) either a or b

D) none of the above

18. For purposes of routing, the Internet is divided into _____. A) wide area networks

B) autonomous networks

C) autonomous systems

D) none of the above

19. _____ is a group of networks and routers under the authority of a single administration.

A) An autonomous system

B) An area

C) a and b

D) none of the above

20. Routing inside an autonomous system is referred to as _____. A) interdomain routing

B) intradomain routing

C) both a and b

D) none of the above

21. Routing between autonomous systems is referred to as _____. A) interdomain routing

B) intradomain routing

C) both a and b

D) none of the above

22. In _____ routing, the least cost route between any two nodes is the route with the minimum distance.

A) path vector

B) distance vector

C) link state

D) none of the above

23. In _____, each node maintains a vector (table) of minimum distances to every node. A) path vector

B) distance vector

C) link state

D) none of the above

24. In distance vector routing, each node periodically shares its routing table with _____ and whenever there is a change.

A) every other node

B) its immediate neighbors

C) one neighbor

D) none of the above

25. The Routing Information Protocol (RIP) is an intradomain routing based on _____ routing.

A) distance vector

B) link state

C) path vector

D) none of the above

26. The metric used by _____ is the hop count.

A) OSPF

B) RIP

C) BGP

D) none of the above

27. The _____ routing uses the Dijkstra algorithm to build a routing table. A)

distance vector

B) link state

C) path vector

D) none of the above

28. The Open Shortest Path First (OSPF) protocol is an intradomain routing protocol based on _____ routing.

A) distance vector

B) link state

C) path vector

D) none of the above

29. The _____ protocol allows the administrator to assign a cost, called the metric, to each route.

A) OSPF

B) RIP

C) BGP

D) none of the above

30. In OSPF, a _____ link connects two routers without any other host or router in between.

A) point-to-point

B) transient

C) stub

D) none of the above

31. In OSPF, a _____ link is a network with several routers attached to it. A) point-to-point

B) transient

C) stub

D) none of the above

32. In OSPF, a _____ link is a network is connected to only one router. A) point-to-point

B) transient

C) stub

D) none of the above

33. In OSPF, when the link between two routers is broken, the administration may create a _____ link between them using a longer path that probably goes through several routers.

A) point-to-point

B) transient

C) stub

D) none of the above

34. In _____ routing, we assume that there is one node (or more) in each autonomous system that acts on behalf of the entire autonomous system.

A) distant vector

B) path vector

C) link state

D) none of the above

35. _____ is an interdomain routing protocol using path vector routing. A) BGP

B) RIP

C) OSPF

D) none of the above

36. To create a neighborhood relationship, a router running BGP sends an _____ message.

A) open

B) update

C) keepalive

D) none of the above

37. An area is _____.

A) part of an AS

B) composed of at least two ASs

C) another term for an AS

D) none of the above

38. A one-to-all communication between one source and all hosts on a network is classified as a _____ communication.

A) unicast

B) multicast

C) broadcast

D) none of the above

39. A one-to-many communication between one source and a specific group of hosts is classified as a _____ communication.

A) unicast

B) multicast

C) broadcast

D) none of the above

40. A one-to-one communication between one source and one destination is classified as a _____ communication.

A) unicast

B) multicast

C) broadcast

D) none of the above

41. In _____, the router forwards the received packet through only one of its interfaces. A) unicasting

B) multicasting

C) broadcasting

D) none of the above

42. In _____, the router may forward the received packet through several of its interfaces. A) unicasting

B) multicasting

C) broadcasting

D) none of the above

43. Emulation of _____ through _____ is not efficient and may create long delays. A) unicasting; multiple unicasting

B) multicasting; multiple unicasting

C) broadcasting; multicasting

D) none of the above

44. In unicast routing, each router in the domain has a table that defines a _____ path tree to possible destinations.

A) average

B) longest

C) shortest

D) none of the above

45. In multicast routing, each involved router needs to construct a _____ path tree for each

group.

A) average

B) longest

C) shortest

D) none of the above

46. In the _____ tree approach, each router needs to have one shortest path tree for each group.

A) group-shared

B) source-based

C) a or b

D) none of the above

47. In the group-shared tree approach, _____ involved in multicasting. A) only the core router is

B) all routers are

C) only some routers are

D) none of the above

48. Multicast link state routing uses the _____ tree approach.

A) source-based

B) group-shared

C) a or b

D) none of the above

49. The Multicast Open Shortest Path First (MOSPF) protocol is an extension of the OSPF protocol that uses multicast routing to create source-based trees. The protocol is based on _____ routing.

A) distance vector

B) link state

C) path vector

D) none of the above

50. MOSPF is a _____ protocol.

A) data-driven

B) command-driven

C) both a and b

D) none of the above

51. _____ broadcasts packets, but creates loops in the systems. A) Forwarding

B) Flooding

C) Backwarding

D) none of the above

52. In RPF, a router forwards only the copy that has traveled the _____ path from the source to the router.

A) shortest

B) longest

C) average

D) none of the above

53. RPF eliminates the _____ in the flooding process.

A) forwarding

B) backwarding

C) flooding

D) none of the above

54. RPF guarantees that each network receives only ____ of the multicast packet. A) one copy

B) two copies

C) a or b

D) none of the above

55. RPB creates a shortest path _____ tree from the source to each destination. A) unicast

B) multicast

C) broadcast

D) none of the above

56. RPB guarantees that each destination receives _____ of the packet. A) one copy

B) no copies

C) multiple copies

D) none of the above

57. In _____, the multicast packet must reach only those networks that have active members for that particular group.

A) RPF

B) RPB

C) RPM

D) none of the above

58. _____ adds pruning and grafting to _____ to create a multicast shortest path tree that supports dynamic membership changes.

A) RPM; RPB

B) RPB; RPM

C) RPF: RPM

D) none of the above

59. _____ is an implementation of multicast distance vector routing. It is a source based routing protocol, based on RIP.

A) MOSPF

B) DVMRP

C) CBT

D) none of the above

60. DVMRP is a _____routing protocol, based on RIP.

A) source-based

B) group-shared

C) both a and b

D) none of the above

61. Pruning and grafting are strategies used in _____.

A) RPF

B) RPB

C) RPM

D) none of the above

62. A _____ message tells an upstream router to stop sending multicast messages for a specific group through a specific router.

A) weed

B) graft

C) prune

D) none of the above

63. A _____ message tells an upstream router to start sending multicast messages

for a specific group through a specific router.

A) weed

B) graft

C) prune

D) none of the above

64. CBT is a _____ protocol that uses a core as the root of the tree. A) source-based

B) group-shared

C) a or b

D) none of the above

65. PIM-DM is used in a _____ multicast environment, such as a LAN.

A) dense

B) sparse

C) a or b

D) none of the above

66. PIM-SM is used in a _____multicast environment such as a WAN.

A) dense

B) sparse

C) a or b

D) none of the above

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
B	C	C	D	B	A	B	C	A	B	A	B	A	B	C	A	B	C	A	B	A	B
23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
B	B	A	B	B	B	A	A	B	C	D	B	A	A	A	C	B	A	A	B	B	C
45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66
C	B	A	A	B	A	B	A	D	D	C	A	C	A	B	A	C	C	B	B	A	B

Part-6

1. A _____ address is an internetwork address with universal jurisdiction. A) physical

B) logical

C) a and b

D) none of the above

2. The logical addresses in the Internet are called _____ addresses. A) port

B) IP

C) Email

D) none of the above

3. A _____ is a local address. Its jurisdiction is over a local network. A) physical

B) logical

C) a and b

D) none of the above

4. If the sender is a host and wants to send a packet to another host on the same network, the logical address that must be mapped to a physical address is _____.

A) the destination IP address in the datagram header

B) the IP address of the router found in the routing table

C) either a or b

D) none of the above

5. If the sender is a host and wants to send a packet to another host on another network, the logical address that must be mapped to a physical address is _____.

A) the destination IP address in the datagram header

B) the IP address of the router found in the routing table

C) either a or b

D) none of the above

6. The sender is a router that has received a datagram destined for a host on another network. The logical address that must be mapped to a physical address is _____.

A) the destination IP address in the datagram header

B) the IP address of the router found in the routing table

C) either a or b

D) none of the above

7. The sender is a router that has received a datagram destined for a host on the same network. The logical address that must be mapped to a physical address is _____.

A) the destination IP address in the datagram header

B) the IP address of the router found in the routing table

C) either a or b

D) none of the above

8. In _____, a table associating a logical address with a physical address is updated manually.

A) static mapping

B) dynamic mapping

C) physical mapping

D) none of the above

9. _____ is a dynamic mapping protocol in which a physical address is found for a given logical address.

A) ARP

B) RARP

C) both a and b

D) none of the above

10. The target hardware address on an Ethernet is _____ in an ARP request. A) 0x000000000000

B) 0.0.0.0

C) variable

D) class dependent

11. An ARP reply is normally _____.

A) broadcast

B) multicast

C) unicast

D) none of the above

12. An ARP request is normally _____.

A) broadcast

B) multicast

C) unicast

D) none of the above

13. A technique called _____ is used to create a subnetting effect. A) ARP

B) RARP

C) proxy ARP

D) none of the above

14. A _____ is an ARP that acts on behalf of a set of hosts. A) ARP

B) RARP

C) proxy ARP

D) none of the above

15. ICMP is a _____ layer protocol.

A) data link

B) transport

C) network

D) none of the above

16. ICMP messages are divided into two broad categories: _____. A) query and error reporting messages

B) request and response messages

C) request and reply messages

D) none of the above

17. An ICMP message has _____ header and a variable-size data section. A) a 16-byte

B) a 32-byte

C) an 8-byte

D) none of the above

18. Which of the following is true about ICMP messages?

A) An ICMP error message may be generated for an ICMP error message. B) An ICMP error message may be generated for each fragment. C) An ICMP error message may be generated for a multicast datagram. D) none is true

19. Which of the following is true about ICMP messages?

A) An ICMP error message may be generated for an ICMP error message. B) An ICMP error message may be generated only for the first fragment. C) An ICMP error message may be generated for a multicast datagram. D) none is true

20. IGMP is a companion to the _____ protocol.

A) UDP

B) TCP

C) ICM

D) none of the above

21. IGMP is _____ protocol.

A) an error reporting

B) a group management

C) a transmission

D) none of the above

22. IGMP helps a _____ router create and update a list of loyal members related to each router interface.

A) broadcast

B) unicast

C) multicast

D) none of the above

23. IGMP operates _____.

A) locally

B) globally

C) both a and b

D) none of the above

24. An IGMP query is sent from a _____ to a _____.

A) host; host

B) host; router

C) router; host or router

D) none of the above

25. The _____ is used by a router in response to a received leave report. A) general query message

B) special query message

C) membership report

D) none of the above

26. The least significant 23 bits in a 48-bit Ethernet address identify a _____. A) multicast router

B) host

C) multicast group

D) none of the above

27. The _____ field of the IGMP message is all zeros in a query message. A) version

B) type

C) group address

D) none of the above

28. A multicast message is sent from _____ to _____.

A) one source; one destination

B) one source; multiple destinations

C) multiple sources; one destination

D) none of the above

29. In networks that do not support physical multicast addressing, multicasting can be accomplished through _____.

A) mapping

B) queries

C) tunneling

D) none of the above

30. If four hosts on a network belong to the same group, a total of _____ sent in response to a general query message.

A) one membership report is

B) two membership reports are

C) three membership reports are

D) none of the above

31. In IGMP, a membership report is sent _____.

A) once

B) twice

C) three times

D) none of the above

32. In IGMP, the general query message _____ group.

A) does not define a particular

B) explicitly defines a

C) can define more than one

D) none of the above

33. An IGMP packet is carried in an _____ packet.

A) UDP

B) IP

C) Ethernet frame

D) none of the above

34. The IP packet that carries an IGMP packet has a value of _____ in its protocol field. A) 3

B) 2

C) 1

D) none of the above

ANSWERS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
B	B	A	A	B	B	A	A	A	A	C	A	C	C	C	A	C	D	B	D	B	C
23	24	25	26	27	28	29	30	31	32	33	34										
A	C	B	C	C	B	C	B	B	A	B	B										

Part-7

1. A best-effort delivery service such as IPv4 includes _____.

A) error checking

B) error correction

C) datagram acknowledgment

D) none of the above

2. In IPv4 header, an HLEN value of decimal 10 means _____.

A) there are 10 bytes of options

B) there are 40 bytes of options

C) there are 10 bytes in the header

D) there are 40 bytes in the header

3. In IPv4, what is the value of the total length field in bytes if the header is 28 bytes and the data field is 400 bytes?

A) 428

B) 407

C) 107

D) 427

4. In IPv4, what is the length of the data field given an HLEN value of 12 and total length value of 40,000?

A) 39,988

B) 40,012

C) 40,048

D) 39,952

5. An IPv4 datagram is fragmented into three smaller datagrams. Which of the following is true?

A) The do not fragment bit is set to 1 for all three datagrams.

B) The more fragment bit is set to 0 for all three datagrams.

C) The identification field is the same for all three datagrams.

D) The offset field is the same for all three datagrams.

6. In IPv4, if the fragment offset has a value of 100, it means that _____. A) the datagram has not been fragmented

B) the datagram is 100 bytes in size

C) the first byte of the datagram is byte 100

D) the first byte of the datagram is byte 800

7. In IPv4, what is needed to determine the number of the last byte of a fragment? A) Identification number

B) Offset number

C) Total length

D) (b) and (c)

8. The IPv4 header size _____.

A) is 20 to 60 bytes long

B) is always 20 bytes long

C) is always 60 bytes long

D) depends on the MTU

9. Which of the following is a necessary part of the IPv6 datagram? A) Base header

B) Extension header

C) Data packet from the upper layer

D) (a) and (c)

10. In IPv6, the _____ field in the base header restricts the lifetime of a datagram. A) version

B) next-header

C) hop limit

D) neighbor-advertisement

11. The _____ protocol is the transmission mechanism used by the TCP/IP suite. A) ARP

B) IP

C) RARP

D) none of the above

12. IP is _____ datagram protocol.

A) an unreliable

B) a connectionless

C) both a and b

D) none of the above

13. The term _____ means that IP provides no error checking or tracking. IP assumes the unreliability of the underlying layers and does its best to get a transmission through to its destination, but with no guarantees.

A) reliable delivery

B) connection-oriented delivery

C) best-effort delivery

D) none of the above

14. In IPv4, an HLEN value of decimal 10 means _____.

A) there are 10 bytes of options

B) there are 40 bytes of options

C) there are 40 bytes in the header

D) none of the above

15. In IPv4, which field or bit value unambiguously identifies the datagram as a fragment? A) Do not fragment bit ? 0

B) More Fragment bit ? 0

C) Fragment offset = 1000

D) none of the above

16. The IPv4 header size _____.

A) is 20 to 60 bytes long

B) is 20 bytes long

C) is 60 bytes long

D) none of the above

17. In IPv4, when a datagram is encapsulated in a frame, the total size of the datagram must be less than the _____.

A) MUT

B) MAT

C) MTU

D) none of the above

18. The IPv4 header field formerly known as the service type field is now called the _____ field.

A) IETF

B) checksum

C) differentiated services

D) none of the above

19. In IPv6, options are inserted between the _____ and the _____ data. A) base header; extension header

B) base header; upper-layer data

C) base header; frame header

D) none of the above

20. IPv6 allows _____ security provisions than IPv4.

A) more

B) less

C) the same level

D) none of the above

21. In IPv6, when a datagram needs to be discarded in a congested network, the decision is based on the _____ field in the base header.

A) hop limit

B) priority

C) next header

D) none of the above

22. In IPv6, the _____ field in the base header and the sender IP address combine to indicate a unique path identifier for a specific flow of data.

A) flow label

B) next header

C) hop limit

D) destination IP address

ANSWERS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
D	D	A	D	C	D	D	A	A	C	B	C	C	C	C	A	C	C	B	A	B	A

Part-8

1. An IPv4 address consists of _____ bits.

A) 4

B) 8

C) 32

D) 64

2. In IPv4, class _____ has the greatest number of addresses in each block. A) A

B) B

C) C

D) D

3. Identify the class of the following IPv4 address: 4.5.6.7.

A) A

B) B

C) C

D) none of the above

4. Identify the class of the following IPv4 address:
229.1.2.3. A) A

B) B

C) D

D) none of the above

5. Identify the class of the following IPv4 address:
191.1.2.3. A) A

B) B

C) C

D) none of the above

6. What is the result of ANDing 255 and 15?

A) 255

B) 15

C) 0

D) none of the above

7. What is the result of ANDing 0 and 15?

A) 255

B) 15

C) 0

D) none of the above

8. What is the result of ANDing 254 and 15?

A) 254

B) 14

C) 0

D) none of the above

9. What is the result of ANDing 192 and 65?

A) 192

B) 65

C) 64

D) none of the above

10. Which one is not a contiguous mask?

A) 255.255.255.254

B) 255.255.224.0

C) 255.148.0.0

D) all are

11. The number of addresses in a class C block is

_____. A) 65,534

B) 16,777,216

C) 256

D) none of the above

12. The number of addresses in a class B block is _____. A) 65,536

B) 16,777,216

C) 256

D) none of the above

13. The number of addresses in a class A block is _____.

A) 65,534

B) 16,777,216

C) 256

D) none of the above

14. The number of addresses assigned to an organization in classless addressing _____. A) can be any number

B) must be a multiple of 256

C) must be a power of 2

D) none of the above

15. The first address assigned to an organization in classless addressing _____. A) must be a power of 4

B) must be evenly divisible by the number of addresses

C) must belong to one of the A, B, or C classes

D) none of the above

16. Which address could be the beginning address of a block of 32 classless addresses? A) 2.4.6.5

B) 2.4.6.16

C) 2.4.6.64

D) none of the above

17. Which address could be the beginning address of a block of 16 classless addresses? A) 2.4.6.5

B) 2.4.6.15

C) 2.4.6.62

D) none of the above

18. Which address could be the beginning address of a block of 256 classless addresses? A) 2.4.6.5

B) 2.4.6.15

C) 2.4.6.0

D) none of the above

19. What is the first address of a block of classless addresses if one of the addresses is 12.2.2.76/27?

A) 12.2.2.0

B) 12.2.2.32

C) 12.2.2.64

D) none of the above

20. What is the first address of a block of classless addresses if one of the addresses is 12.2.2.76/10?

A) 12.0.0.0

B) 12.2.0.0

C) 12.2.2.2

D) none of the above

21. What is the first address of a block of classless addresses if one of the addresses is 12.2.2.127/28?

A) 12.2.2.0

B) 12.2.2.96

C) 12.2.2.112

D) none of the above

22. Find the number of addresses in a block of classless addresses if one of the addresses is 12.2.2.7/24.

A) 32

B) 64

C) 256

D) none of the above

23. Find the number of addresses in a block of classless addresses if one of the addresses is 12.2.2.7/30.

A) 2

B) 4

C) 8

D) none of the above

24. What is the last address of a block of classless addresses if one of the addresses is 12.2.2.127/28?

A) 12.2.2.16

B) 12.2.2.112

C) 12.2.2.127

D) none of the above

25. What is the last address of a block of classless addresses if one of the addresses is 12.2.2.6/30?

A) 12.2.2.2

B) 12.2.2.6

C) 12.2.2.7

D) none of the above

26. An organization is granted a block; one address is 2.2.2.64/20. The organization needs 10 subnets. What is the subnet prefix length?

A) /20

B) /24

C) /25

D) none of the above

27. An organization is granted a block; one address is 2.2.2.64/25. If the subnet prefix length is /28, what is the maximum number of subnets?

A) 2

B) 4

C) 8

D) none of the above

28. An organization is granted a block of classless addresses with the starting address 199.34.76.64/28. How many addresses are granted?

A) 8

B) 16

C) 32

D) none of the above

29. An organization is granted a block of classless addresses with the starting address 199.34.76.128/29. How many addresses are granted?

A) 8

B) 16

C) 32

D) none of the above

30. An organization is granted a block of classless addresses with the starting address 199.34.32.0/27. How many addresses are granted?

A) 8

B) 16

C) 32

D) none of the above

31. What is the default mask for class A in CIDR notation?

A) /9

B) /8

C) /16

D) none of the above

32. What is the default mask for class B in CIDR notation?

A) /9

B) /8

C) /16

D) none of the above

33. What is the default mask for class C in CIDR notation?

A) /24

B) /8

C) /16

D) none of the above

34. In classless addressing, the _____ is another name for the common part of the address range.

A) suffix

B) prefix

C) netid

D) none of the above

35. In classless addressing, the _____ is the varying part (similar to the hostid). A) suffix

B) prefix

C) hostid

D) none of the above

36. In classless addressing, the prefix length defines the

_____. A) netid

B) hostid

C) mask

D) none of the above

37. In a block, the prefix length is /24; what is the mask? A) 255.255.255.0

B) 255.255.242.0

C) 255.255.0.0

D) none of the above

38. In a block, the prefix length is /15; what is the mask? A) 255.254.0.0

B) 255.255.255.0

C) 255.255.255.128

D) none of the above

39. In a block, the mask is 255.255.192.0; what is the prefix length? A) /20

B) /28

C) /18

D) none of the above

40. An IPv6 address is _____ bits long.

A) 32

B) 64

C) 128

D) none of the above

41. An IPv6 address consists of _____ bytes (octets);

A) 4

B) 8

C) 16

D) none of the above

42. To make addresses more readable, IPv6 specifies _____notation. A) dotted decimal

B) hexadecimal colon

C) both a and b

D) none of the above

43. In hexadecimal colon notation, a 128-bit address is divided into _____ sections, each _____ hexadecimal digits in length.

A) 8: 2

B) 8: 3

C) 8: 4

D) none of the above

44. An IPv6 address can have up to _____ colons.

A) 8

B) 7

C) 4

D) none of the above

45. An IPv6 address can have up to _____ hexadecimal digits.

A) 16

B) 32

C) 8

D) none of the above

46. In IPv6, _____ address defines a single computer.

A) a unicast

B) a multicast

C) an anycast

D) none of the above

47. In IPv6, ____ address defines a group of computers with addresses that have the same prefix.

A) a unicast

B) a multicast

C) an anycast

D) none of the above

48. In IPv6, _____ address defines a group of computers.

A) a unicast

B) a multicast

C) an anycast

D) none of the above

49. In IPv6, the _____ prefix defines the purpose of the address. A) type

B) purpose

C) both a and b

D) none of the above

50. In IPv6, the_____ address is generally used by a normal host as a unicast address.

A) provider-based unicast

B) link local

C) site local

D) none of the above

51. In IPv6, a _____address comprises 80 bits of zero, followed by 16 bits of one, followed by the 32-bit IPv4 address.

A) link local

B) site local

C) mapped

D) none of the above

52. In IPv6, a _____ address is an address of 96 bits of zero followed by 32 bits of IPv4 address.

A) link local

B) site local

C) mapped

D) none of the above

53. In IPv6, a _____ address is used if a LAN uses the Internet protocols but is not connected to the Internet for security reasons.

A) link local

B) site local

C) mapped

D) none of the above

54. In IPv6, a _____address is used if a site with several networks uses the Internet protocols but is not connected to the Internet for security reasons.

A) link local

B) site local

C) mapped

D) none of the above

ANSWERS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
C	A	A	C	B	B	C	B	C	C	C	A	B	C	B	C	D	C	C	A	C
22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
C	B	C	C	B	C	B	A	C	B	C	A	B	A	C	A	A	C	C	C	B
43	44	45	46	47	48	49	50	51	52	53	54									
C	B	B	A	C	B	A	A	C	D	A	B									

Part-8

1. _____ is a virtual-circuit wide-area network that was designed in response to demands for a new type of WAN in the late 1980s and early 1990s.

A) X.25

B) Frame Relay

C) ATM

D) none of the above

2. Frame Relay provides _____.

A) PVCs

B) SVCs

C) either (a) or (b)

D) neither (a) nor (b)

3. VCIs in Frame Relay are called _____.

A) PVC

B) SVC

C) DLCIs

D) none of the above

4. In Frame Relay, when a _____ is selected, the corresponding table entry is recorded for all switches by the administrator

A) PVC

B) SVC

C) either (a) or (b)

D) neither (a) nor (b)

5. In Frame Relay, when. _____ is selected, it requires establishing and terminating phases A) a PVC

B) an SVC

C) either (a) or (b)

D) neither (a) nor (b)

6. Frame Relay has _____.

A) only the physical layer

B) only the data link

C) the physical and data link layers

D) the physical, data link, and network layers

7. At the data link layer, Frame Relay uses a protocol that supports _____control. A) flow

B) error

C) either (a) or (b)

D) neither (a) nor (b)

8. In Frame Relay, an address can be _____ bytes.

A) only 2

B) 2 to 3

C) 2 to 4

D) none of the above

9. In Frame Relay, the EA field defines the number of bytes; it is _____ in the last byte of the address.

A) 0

B) 1

C) 2

D) 3

10. To handle frames arriving from other protocols, Frame Relay uses a device called a _____.

A) VOFR

B) FRAD

C) MUX

D) none of the above

11. Frame Relay networks offer an option called _____ that sends voice through the network.

A) VOFR

B) FRAD

C) MUX

D) none of the above

12. _____ is the cell relay protocol designed by the corresponding Forum and adopted by the ITU-T.

A) X.25

B) Frame Relay

C) ATM

D) none of the above

13. A _____ is defined as a small, fixed-size block of information.

A) frame

B) packet

C) cell

D) none of the above

14. In ATM, a virtual connection is defined by _____.

A) VPI

B) VCI

C) DLCI

D) a combination of (a) and (b)

15. The ATM standard defines _____ layers.

A) two

B) three

C) four

D) five

16. The VPI of a UNI is _____ bits in length.

A) 8

B) 12

C) 16

D) 24

17. The VPI of an NNI is _____ bits in length.

A) 8

B) 12

C) 16

D) 24

18. The ATM data packet is a cell composed of _____ bytes.

A) 40

B) 50

C) 52

D) 53

19. _____ eliminates the varying delay times associated with different-size packets. A) X.25

B) Frame Relay

C) ATM

D) all of the above

20. A(n) _____ is the interface between a user and an ATM switch.

A) UNI

B) NNI

C) NNN

D) None of the above

21. _____ is the interface between two ATM switches.

A) UNI

B) NNI

C) NNN

D) none of the above

22. In ATM, connection between two endpoints is accomplished through _____. A) TPs

B) VPs

C) VCs

D) all of the above

23. In ATM, the _____layer accepts transmissions from upper-layer services and maps them into ATM cells.

A) physical

B) ATM

C) AAL

D) none of the above

24. In ATM, the _____ layer provides routing, traffic management, switching, and multiplexing services.

A) physical

B) ATM

C) AAL

D) none of the above

25. In ATM, the _____ layer defines the transmission medium, bit transmission, encoding, and electrical-to-optical transformation.

A) physical

B) ATM layer

C) AAL

D) none of the above

26. The AAL is divided into _____ sublayers.

A) two

B) three

C) four

D) none of the above

27. In ATM, _____ is for constant-bit-rate data.

A) AAL1

B) AAL2

C) AAL3/4

D) AAL5

28. In ATM, _____is for short packets.

A) AAL1

B) AAL2

C) AAL3/4

D) AAL5

29. In ATM, _____ is for conventional packet switching (virtual-circuit approach or datagram approach).

A) AAL1

B) AAL2

C) AAL3/4

D) AAL5

30. In ATM, _____ is for packets requiring no sequencing and no error control mechanism. A) AAL1

B) AAL2

C) AAL3/4

D) AAL5

31. _____ technology can be adapted for use in a LAN (ATM LAN).

A) X.25

B) Frame Relay

C) ATM

D) none of the above

32. In a _____ ATM LAN, an ATM switch connects stations.

A) pure

B) legacy

C) mixed architecture

D) none of the above

33. In a _____ ATM LAN, the backbone that connects traditional LANs uses ATM technology.

A) pure

B) legacy

C) mixed architecture

D) none of the above

34. A _____ ATM LAN combines features of a pure ATM LAN and a legacy ATM LAN. A) pure

B) legacy

C) mixed architecture

D) none of the above

ANSWERS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
B	C	C	A	B	C	D	C	B	B	A	C	C	D	B	A	B	D	C	A	B
22	23	24	25	26	27	28	29	30	31	32	33	34								
D	C	B	A	A	A	B	C	D	C	A	B	C								

Part-9

1. _____ is a standard developed by ANSI for fiber-optic networks. A) SONET

B) SDH

C) either (a) or (b)

D) neither (a) nor (b)

2. _____ is a standard developed by ITU-T.

A) SONET

B) SDH

C) either (a) or (b)

D) neither (a) nor (b)

3. SONET has defined a hierarchy of signals called _____. A) STSs

B) STMs

C) either (a) or (b)

D) neither (a) nor (b)

4. SDH has defined a hierarchy of signals called _____. A) STSs

B) STMs

C) either (a) or (b)

D) neither (a) nor (b)

5. An _____ signal is the optical modulation of an STS-n (or STM-n) signal. A) OC-n

B) TDM-n

C) FDM-n

D) none of the above

6. SONET defines _____ layers.

A) two

B) three

C) four

D) five

7. SONET is a _____ TDM system.

A) asynchronous

B) synchronous

C) statistical

D) none of the above

8. A SONET system can use _____.

A) STS multiplexers

B) regenerators

C) add/drop multiplexers

D) all of the above

9. SONET sends _____ frames per second A) 1000

B) 2000

C) 4000

D) 8000

10. In SONET each frame lasts _____ microseconds. A) 20

B) 64

C) 128

D) none of the above

11. An STS-1 frame is made of _____ rows A) 1

B) 9

C) 90

D) none of the above

12. An STS-1 frame is made _____columns A) 1

B) 9

C) 90

D) none of the above

13. An STS-3 frame is made of _____ rows. A) 1

B) 9

C) 27

D) none of the above

14. An STS-3 frame is made of _____ columns. A) 9

B) 90

C) 270

D) none of the above

15. SONET network topologies can be _____. A) linear

B) ring

C) mesh

D) all of the above

16. A linear SONET network can be _____. A) point-to-point

B) multipoint

C) either (a) or (b)

D) neither (a) nor (b)

17. A ring SONET network can be _____.

A) unidirectional

B) bidirectional.

C) either (a) or (b)

D) neither (a) nor (b)

18. To make SONET backward-compatible with the current hierarchy, its frame design includes a system of.

A) OCs

B) STMs

C) STSs

D) VTs

19. A _____ is a repeater.

A) regenerator

B) ADM

C) STS multiplexer/demultiplexer

D) none of the above

20. _____ allow insertion and extraction of signals.

A) regenerators

B) ADMs

C) STS multiplexer/demultiplexers

D) none of the above

21. A _____ is the optical link connecting two neighbor devices.

A) section

B) line

C) path

D) none of the above

22. A _____ is the portion of the network between two multiplexers. A) section

B) line

C) path

D) none of the above

23. A _____is the end-to-end portion of the network between two STS multiplexers. A) section

B) line

C) path

D) none of the above

24. The _____ layer is responsible for the movement of a signal from its optical source to its optical destination.

A) section

B) line

C) path

D) photonic

25. The ____ layer is responsible for the movement of a signal across a physical line. A) section

B) line

C) path

D) photonic

26. The _____ layer is responsible for the movement of a signal across a physical section. A) section

B) line

C) path

D) photonic

27. The _____ layer corresponds to the physical layer of the OSI model. A) section

B) line

C) path

D) photonic

28. An STS multiplexer is a _____ device.

A) one-layer

B) two-layer

C) three-layer

D) four-layer

29. An add/drop multiplexer is a _____ device.

A) one-layer

B) two-layer

C) three-layer

D) four-layer

30. A regenerator is a _____ device.

A) one-layer

B) two-layer

C) three-layer

D) four-layer

31. In SONET, for each frame, the bytes are transmitted _____. A) from left to the right, top to bottom

B) from right to the left, bottom to top

C) from left to the right, bottom to top

D) from right to the left, top to bottom

32. In SONET, for each byte, the bits are transmitted _____. A) from least significant to the most significant B) from most significant to the least significant

C) two at a time

D) three at a time

33. Each _____in a SONET frame can carry a digitized voice channel. A) bit

B) byte

C) frame

D) none of the above

34. The section overhead consists of _____octets.

A) 1

B) 6

C) 9

D) 18

35. Line overhead consists of _____ bytes.

A) 1

B) 6

C) 9

D) 18

36. The path overhead consists of _____ bytes.

A) 1

B) 6

C) 9

D) 18

37. In _____ APS, there are normally two lines: one working line and one protection line. Both lines are active all the time.

A) one-plus-one

B) one-to-one

C) one-to-many

D) none of the above

38. In _____ APS, there is one working line and one protection line. The data are

normally sent on the working line until it fails.

A) one-plus-one

B) one-to-one

C) one-to-many

D) none of the above

39. In _____APS, there is only one protection line for many working lines. When a failure occurs in one of the working lines, the protection line takes control until the failed line is repaired.

A) one-plus-one

B) one-to-one

C) one-to-many

D) none of the above

ANSWERS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
A	B	A	B	A	C	B	D	D	D	B	C	B	C	D	C	C	D	A	B	A
22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39			
B	C	C	B	A	D	D	C	B	A	B	B	C	D	C	A	B	C			

Part-10

1. _____ is a first-generation cellular phone system.

A) AMPS

B) D-AMPS

C) GSM

D) none of the above

2. _____ is a second-generation cellular phone system. A) AMPS

B) D-AMPS

C) GSM

D) none of the above

3. _____ is a digital version of AMPS.

A) GSM

B) D-AMPS

C) IS-95

D) none of the above

4. _____ is a second-generation cellular phone system used in Europe. A) GSM

B) D-AMPS

C) IS-95

D) none of the above

5. _____ is a second-generation cellular phone system based on CDMA and DSSS. A) GSM

B) D-AMPS

C) IS-95

D) none of the above

6. The _____ cellular phone system will provide universal personal communication. A) first-generation

B) second-generation

C) third-generation

D) none of the above

7. In a _____ handoff, a mobile station only communicates with one base station. A) hard

B) soft

C) medium

D) none of the above

8. In a _____ handoff, a mobile station can communicate with two base stations at the same time.

A) hard

B) soft

C) medium

D) none of the above

9. _____ is an analog cellular phone system using FDMA. A) AMPS

B) D-AMPS

C) GSM

D) none of the above

10. AMPS operates in the ISM _____ band.

A) 800-MHz

B) 900-MHz

C) 1800-MHz

D) none of the above

11. In AMPS, each band is divided into _____ channels. A) 800

B) 900

C) 1000

D) none of the above

12. AMPS has a frequency reuse factor of _____. A) 1

B) 3

C) 5

D) 7

13. AMPS uses _____ to divide each 25-MHz band into channels. A) FDMA

B) TDMA

C) CDMA

D) none of the above

14. D-AMPS uses _____ to divide each 25-MHz band into channels. A) FDMA

B) TDMA

C) CDMA

D) both (a) and (b)

15. GSM allows a reuse factor of _____.

A) 1

B) 3

C) 5

D) 7

16. GSM is a digital cellular phone system using _____. A) FDMA

B) TDMA

C) CDMA

D) both (a) and (b)

17. IS-95 is based on _____.

A) FDMA

B) CDMA

C) DSSS

D) all of the above

18. IS-95 uses the ISM _____band.

A) 800-MHz

B) 900-MHz

C) 1900-MHz

D) either (a) or (c)

19. IS-95 uses the _____ satellite system for synchronization. A) GPS

B) Teledesic

C) Iridium

D) none of the above

20. In an IS-95 system, the frequency-reuse factor is normally _____. A) 1

B) 3

C) 5

D) 7

21. In the third generation of cellular phones, _____ uses W-CDMA. A) IMT-DS

B) IMT-MC

C) IMT-TC

D) IMT-SC

22. In the third generation of cellular phones, _____ uses CDMA2000. A) IMT-DS

B) IMT-MC

C) IMT-TC

D) IMT-SC

23. In the third generation of cellular phones, _____ uses a combination of W-CDMA and TDMA.

A) IMT-DS

B) IMT-MC

C) IMT-TC

D) IMT-SC

24. In the third generation of cellular phones, _____ uses TDMA.

A) IMT-DS

B) IMT-MC

C) IMT-TC

D) IMT-SC

25. The period of a satellite, the time required for a satellite to make a complete trip around the Earth, is determined by _____ law.

A) Kepler's

B) Newton's

C) Ohm's

D) none of the above

26. The signal from a satellite is normally aimed at a specific area called the _____. A) path
B) effect

C) footprint

D) none of the above

27. There is (are) _____ orbit(s) for a GEO satellite.

A) one

B) two

C) many

D) none of the above

28. MEO satellites are located at altitudes between km.

A) 3000 and 5000

B) 5000 and 10,000

C) 5000 and 15,000

D) none of the above

29. LEO satellites are normally below an altitude of _____ km. A) 1000

B) 2000

C) 3000

D) none of the above

30. _____ is based on a principle called trilateration. A) GPS

B) Teledesic

C) Iridium

D) none of the above

31. Low-Earth-orbit (LEO) satellites have _____ orbits. A) equatorial

B) polar

C) inclined

D) none of the above

32. A GEO is at the _____ orbit and revolves in phase with Earth. A) equatorial

B) polar

C) inclined

D) none of the above

33. GPS satellites are _____ satellites.

A) GEO

B) MEO

C) LEO

D) none of the above

34._____ satellites provide time and location information for vehicles and ships. A) GPS

B) Iridium

C) Teledesic

D) none of the above

35. Iridium satellites are _____satellites.

A) GEO

B) MEO

C) LEO

D) none of the above

36. _____ satellites can provide direct universal voice and data communications for handheld terminals.

A) GPS

B) Iridium

C) Teledesic

D) none of the above

37. Teledesic satellites are _____satellites.

A) GEO

B) MEO

C) LEO

D) none of the above

38. _____ satellites will provide universal broadband Internet access. A) GPS

B) Iridium

C) Teledesic

D) none of the above

ANSWERS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
A	B	B	A	C	C	A	B	A	A	D	D	A	D	B	D	D	D	A	A	A
22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38				
B	C	D	A	C	A	C	B	A	B	A	B	A	C	B	C	C				

Part-11

1. A repeater is a connecting device that operates in the _____ layer of the Internet model.

A) physical

B) data link

C) network

D) all of the above

2. A _____ regenerates a signal, connects segments of a LAN, and has no filtering capability.

A) repeater

B) bridge

C) router

D) none of the above

3. A _____ is a connecting device that operates in the physical and data link layers of the Internet model.

A) repeater

B) bridge

C) router

D) none of the above

4. A _____ bridge can forward and filter frames and automatically build its forwarding table.

A) simple

B) dual

C) transparent

D) none of the above

5. A bridge can use the _____ algorithm to create a loopless topology. A) binary tree

B) spanning tree

C) multiway tree

D) none of the above

6. A _____ LAN allows several LANs to be connected. A) backbone

B) wireless

C) wired

D) none of the above

7. A backbone is usually a _____.

A) bus

B) star

C) either (a) or (b)

D) neither (a) nor (b)

8. A virtual local area network (VLAN) is configured by _____.

A) software

B) physical wiring

C) hardware

D) none of the above

9. Membership in a VLAN can be based on _____. A) port numbers

B) MAC addresses

C) IP addresses

D) all of the above

10. VLANs can_____.

A) reduce network traffic

B) provide an extra measure of security

C) either (a) or (b)

D) both (a) and (b)

11. _____ is just a connector.

A) An active hub

B) A passive hub

C) either (a) or (b)

D) neither (a) nor (b)

12. In a star-topology Ethernet LAN, _____ is just a point where the signals coming from different stations collide; it is the collision point.

A) An active hub

B) A passive hub

C) either (a) or (b)

D) neither (a) nor (b)

13. _____ is part of the media; its location in the Internet model is below the physical layer.

A) An active hub

B) A passive hub

C) either (a) or (b)

D) neither (a) nor (b)

14. A _____ is a device that operates only in the physical layer. A) passive hub

B) repeater

C) bridge

D) router

15. A _____receives a signal and, before it becomes too weak or corrupted, regenerates the original bit pattern. It then sends the refreshed signal.

A) passive hub

B) repeater

C) bridge

D) router

16. A _____ forwards every frame; it has no filtering capability.

A) passive hub

B) repeater

C) bridge

D) router

17. _____ is actually a multiport repeater. It is normally used to create connections between stations in a physical star topology.

A) An active hub

B) A passive hub

C) either (a) or (b)

D) neither (a) nor (b)

18. A _____ operates in both the physical and the data link layer. A) passive hub

B) repeater

C) bridge

D) router

19. A _____ can check the MAC addresses contained in the frame.

A) passive hub

B) repeater

C) bridge

D) router

20. A _____ has a table used in filtering decisions.

A) passive hub

B) repeater

C) bridge

D) none of the above

21. A _____ is a device in which the stations are completely unaware of its existence.

A) passive hub

B) repeater

C) simple bridge

D) transparent bridge

22. IEEE 802.1d specification, defines _____ criteria for a transparent bridges.

A) two

B) three

C) four

D) none of the above

23. A spanning tree is a graph in which there is no _____.

A) node

B) branch

C) loop

D) arc

24. In a bridged LAN, the _____ algorithm creates a topology in which each LAN can be reached from any other LAN through one path only.

A) spanning tree

B) binary tree

C) unary tree

D) none of the above

25. A three-layer switch is a kind of _____.

A) repeater

B) bridge

C) router

D) none of the above

26. A two-layer switch is a _____.

A) repeater

B) bridge

C) router

D) none of the above

27. Some new two-layer switches, called _____ switches, have been designed to forward the frame as soon as they check the MAC addresses in the header of the frame.

A) cut-through

B) go-through

C) come-through

D) none of the above

28. A _____ is a three-layer device that handles packets based on their logical addresses.

A) repeater

B) bridge

C) router

D) none of the above

29. A _____ normally connects LANs and WANs in the Internet and has a table that is used for making decisions about the route.

A) repeater

B) bridge

C) router

D) none of the above

30. A _____ switch is a faster and more sophisticated router.

A) two-layer

B) three-layer

C) four-layer

D) none of the above

31. A _____ is normally a computer that operates in all five layers of the Internet model or seven layers of OSI model.

A) repeater

B) bridge

C) router

D) gateway

32. A _____ can be used as a connecting device between two internetworks that use different models.

A) repeater

B) bridge

C) router

D) gateway

33. In a _____ backbone, the backbone is just one switch.

A) bus

B) ring

C) star

D) none of the above

34. A _____ link acts as a LAN in a remote backbone connected by remote bridges. A) point-to-point

B) multipoint

C) multidrop

D) none of the above

35. VLANs create _____ domains.

A) unicast

B) multicast

C) broadcast

D) none of the above

36. In a(n) _____ configuration, the administrator types the port numbers, the IP addresses, or other characteristics, using the VLAN software.

A) manual

B) automatic

C) semiautomatic

D) none of the above

37. In a(n) _____ configuration, the stations are automatically connected or disconnected from a VLAN using criteria defined by the administrator.

A) manual

B) automatic

C) semiautomatic

D) none of the above

38. In a(n) _____ configuration, the initializing is done manually, with migrations done automatically.

A) manual

B) automatic

C) semiautomatic

D) none of the above

ANSWERS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
A	A	B	C	B	A	C	A	D	D	B	B	B	B	B	B	A	C	C	C	D
22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38				
B	C	A	C	B	A	C	C	B	D	D	C	A	C	A	B	C				

1. IEEE has defined the specifications for a wireless LAN, called _____, which covers the physical and data link layers.

A) IEEE 802.3

B) IEEE 802.5

C) IEEE 802.11

D) IEEE 802.2

2. In IEEE 802.11, a ___ is made of stationary or mobile wireless stations and an optional central base station, known as the access point (AP).

A) ESS

B) BSS

C) CSS

D) none of the above

3. In IEEE 802.11, a BSS without an AP is called an _____.

A) an ad hoc architecture

B) an infrastructure network

C) either (a) or (b)

D) neither (a) nor (b)

4. In IEEE 802.11, a BSS with an AP is sometimes referred to as _____. A) an ad hoc architecture

B) an infrastructure network

C) either (a) or (b)

D) neither (a) nor (b)

5. In IEEE 802.11, communication between two stations in two different BSSs usually occurs via two _____.

A) BSSs

B) ESSs

C) APs

D) none of the above

6. In IEEE 802.11, a station with _____ mobility is either stationary (not moving) or moving only inside a BSS.

A) no-transition

B) BSS-transition

C) ESS-transition

D) none of the above

7. In IEEE 802.11, a station with _____mobility can move from one BSS to another, but the movement is confined inside one ESS.

A) no-transition

B) BSS-transition

C) ESS-transition

D) none of the above

8. In IEEE 802.11, a station with _____ mobility can move from one ESS to

another. A) no-transition

B) BSS-transition

C) ESS-transition

D) none of the above

9. In IEEE 802.11, _____ is an optional access method that can be implemented in an infrastructure network (not in an ad hoc network).

A) DCF

B) PCF

C) either (a) or (b)

D) neither (a) nor (b)

10. In IEEE 802.11, when a frame is going from one station in a BSS to another without passing through the distribution system, the address flag is _____

A) 00

B) 01

C) 10

D) 11

11. In IEEE 802.11, when a frame is coming from an AP and going to a station, the address flag is _____.

A) 00

B) 01

C) 10

D) 11

12. In IEEE 802.11, when a frame is going from a station to an AP, the address flag is _____. A) 00

B) 01

C) 10

D) 11

13. In IEEE 802.11, when a frame is going from one AP to another AP in a wireless distribution system, the address flag is _____

A) 00

B) 01

C) 10

D) 11

14. The IEEE 802.11 standard for wireless LANs defines two services: _____ and _____. A) BSS; ASS

B) ESS; SSS

C) BSS; ESS

D) BSS; DCF

15. In IEEE 802.11, the access method used in the DCF sublayer is _____. A) ALOHA

B) CSMA/CA

C) CSMA/CD

D) none of the above

16. In IEEE 802.11, the access method used in the PCF sublayer is _____. A) contention

B) controlled

C) polling

D) none of the above

17. In IEEE 802.11, the _____ is a timer used for collision avoidance. A) NAV

B) BSS

C) ESS

D) none of the above

18. In IEEE 802.11, the MAC layer frame has _____ fields.

A) four

B) five

C) six

D) none of the above

19. In IEEE 802.11, the addressing mechanism can include up to _____addresses. A) four

B) five

C) six

D) none of the above

20. The original IEEE 802.11, uses _____.

A) FHSS

B) DSSS

C) OFDM

D) either (a) or (b)

21. The IEEE 802.11a, uses _____.

A) FHSS

B) DSSS

C) OFDM

D) either (a) or (b)

22. The IEEE 802.11b, uses _____.

A) FHSS

B) DSSS

C) OFDM

D) either (a) or (b)

23. The IEEE 802.11g, uses _____.

A) FHSS

B) DSSS

C) OFDM

D) either (a) or (b)

24. The original IEEE 802.11, has a data rate of _____Mbps. A) 1

B) 6

C) 11

D) 22

25. IEEE 802.11a, has a data rate of _____Mbps. A) 1

B) 2

C) 6

D) none of the above

26. IEEE 802.11b, has a data rate of _____Mbps.

A) 1

B) 2

C) 5.5

D) none of the above

27. IEEE 802.11g, has a data rate of _____Mbps.

A) 1

B) 2

C) 11

D) 22

28. The IEEE 802.11 wireless LANs use _____ types of frames.

A) four

B) five

C) six

D) none of the above

29. Bluetooth is a _____ technology that connects devices (called gadgets) in a small area.

A) wired LAN

B) wireless LAN

C) VLAN

D) none of the above

30. A Bluetooth network is called a _____.

A) piconet

B) scatternet

C) bluenet

D) none of the above

31. In Bluetooth, multiple _____ form a network called a _____. A) scatternet; piconets

B) piconets: scatternet

C) piconets: bluenet

D) bluenet; scatternet

32. A Bluetooth network consists of _____ primary device(s) and up to ____ secondary devices.

A) one; five

B) five; three

C) two; six

D) one; seven

33. The RTS and CTS frames in CSMA/CA ____ solve the hidden station problem. The RTS and CTS frames in CSMA/CA ____ solve the exposed station problem.

A) can; cannot

B) cannot; can

C) can; can

D) cannot; cannot

34. In Bluetooth, the current data rate is ____Mbps

A) 2

B) 5

C) 11

D) none of the above

35. In Bluetooth, the _____ layer is roughly equivalent to the physical layer of the Internet model.

A) radio

B) baseband

C) L2CAP

D) none of the above

36. In Bluetooth, the _____layer is roughly equivalent to the MAC sublayer in LANs. A) radio

B) baseband

C) L2CAP

D) none of the above

37. In Bluetooth, the L2CAP sublayer, is roughly equivalent to the LLC sublayer in LANs. A) radio

B) baseband

C) L2CAP

D) none of the above

38. The access method in Bluetooth is _____.

A) FDMA

B) TDD-TDMA

C) CDMA

D) none of the above

39. In Bluetooth, the _____ link is used when avoiding latency (delay in data delivery) is more important than integrity (error-free delivery).

A) SCO

B) ACL

C) ACO

D) SCL

40. In Bluetooth, the _____ link is used when data integrity is more important than avoiding latency.

A) SCO

B) ACL

C) ACO

D) SCL

41. Bluetooth uses _____method in the physical layer to avoid interference from other devices or other networks.

A) DSSS

B) FHSS

C) FDMA

D) none of the above

ANSWERS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
C	B	A	B	C	A	B	C	B	A	B	C	D	C	B	C	A	D	A	D	C
22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
B	C	A	C	C	D	D	B	A	B	D	A	D	A	B	C	B	A	B	B	

Part-14

1. What is the hexadecimal equivalent of the Ethernet address 01011010 00010001 01010101 00011000 10101010 00001111?

A) 5A:88:AA:18:55:F0

B) 5A:81:BA:81:AA:0F

C) 5A:18:5A:18:55:0F

D) 5A:11:55:18:AA:0F

2. If an Ethernet destination address is 07:01:02:03:04:05, then this is a _____ address. A) unicast

B) multicast

C) broadcast

D) any of the above

3. If an Ethernet destination address is 08:07:06:05:44:33, then this is a _____ address. A) unicast

B) multicast

C) broadcast

D) any of the above

4. Which of the following could not be an Ethernet unicast destination? A) 43:7B:6C:DE:10:00

B) 44:AA:C1:23:45:32

C) 46:56:21:1A:DE:F4

D) 48:32:21:21:4D:34

5. Which of the following could not be an Ethernet multicast destination? A) B7:7B:6C:DE:10:00

B) 7B:AA:C1:23:45:32

C) 7C:56:21:1A:DE:F4

D) 83:32:21:21:4D:34

6. _____ is the most widely used local area network protocol.

A) Token Ring

B) Token Bus

C) Ethernet

D) none of the above

7. The IEEE 802.3 Standard defines _____ CSMA/CD as the access method for first generation 10-Mbps Ethernet.

A) 1-persistent

B) p-persistent

C) non-persistent

D) none of the above

8. The _____ layer of Ethernet consists of the LLC sublayer and the MAC sublayer. A) data link

B) physical

C) network

D) none of the above

9. The _____ sublayer is responsible for the operation of the CSMA/CD access method and framing.

A) LLC

B) MII

C) MAC

D) none of the above

10. Each station on an Ethernet network has a unique _____ address imprinted on its network interface card (NIC).

A) 5-byte

B) 32-bit

C) 48-bit

D) none of the above

11. The minimum frame length for 10-Mbps Ethernet is _____bytes. A) 32

B) 80

C) 128

D) none of the above

12. The maximum frame length for 10-Mbps Ethernet is _____ bytes. A) 1518

B) 1500

C) 1200

D) none of the above

13. _____ uses thick coaxial cable.

A) 10Base5

B) 10Base2

C) 10Base-T

D) 10Base-F

14. _____ uses thin coaxial cable.

A) 10Base5

B) 10Base2

C) 10Base-T

D) 10Base-F

15. _____ uses four twisted-pair cables that connect each station to a common hub. A) 10Base5

B) 10Base2

C) 10Base-T

D) 10Base-F

16. _____ uses fiber-optic cable.

A) 10Base5

B) 10Base2

C) 10Base-T

D) 10Base-F

17. Fast Ethernet has a data rate of _____Mbps.

A) 10

B) 100

C) 1000

D) 10,000

18. In _____, auto negotiation allows two devices to negotiate the mode or data rate of operation.

A) Standard

B) Fast Ethernet

C) Gigabit Ethernet

D) Ten-Gigabit Ethernet

19. _____ uses two pairs of twisted-pair cable.

A) 100Base-TX

B) 100Base-FX

C) 100Base-T4

D) none of the above

20. _____ uses two fiber-optic cables.

A) 100Base-TX

B) 100Base-FX

C) 100Base-T4

D) none of the above

21. _____ uses four pairs of voice-grade, or higher, twisted-pair cable. A) 100Base-TX

B) 100Base-FX

C) 100Base-T4

D) none of the above

22. Gigabit Ethernet has a data rate of _____Mbps.

A) 10

B) 100

C) 1000

D) 10,000

23. Gigabit Ethernet access methods include _____ mode. A) half-duplex

B) full-duplex

C) both (a) and (b)

D) neither (a) nor (b)

24. _____ uses two optical fibers and a short-wave laser source, A) 1000Base-SX

B) 1000Base-LX

C) 1000Base-T

D) none of the above

25. _____uses two optical fibers and a long-wave laser source. A) 1000Base-SX

B) 1000Base-LX

C) 1000Base-T

D) none of the above

26. _____ uses four twisted pairs.

A) 1000Base-SX

B) 1000Base-LX

C) 1000Base-T

D) none of the above

27. _____ uses short-wave 850-nm multimode fiber. A) 10GBase-S

B) 10GBase-L

C) 10GBase-E

D) none of the above

28. _____uses long-wave 1310-nm single mode fiber.

A) 10GBase-S

B) 10GBase-L

C) 10GBase-E

D) none of the above

29. _____ uses 1550-mm single mode fiber.

A) 10GBase-S

B) 10GBase-L

C) 10GBase-E

D) none of the above

30. In Ethernet addressing, if the least significant bit of the first byte is 0, the address is _____.

A) unicast

B) multicast

C) broadcast

D) none of the above

31. In Ethernet addressing, if the least significant bit of the first byte is 1, the address is _____.

A) unicast

B) multicast

C) broadcast

D) none of the above

32. In Ethernet addressing, if all the bits are 1s, the address is

_____. A) unicast

B) multicast

C) broadcast

D) none of the above

33. _____defines a protocol data unit (PDU) that is somewhat similar to that of HDLC. A) MAC

B) LLC

C) LLU

D) none of the above

34. The purpose of the _____ is to provide flow and error control for the upper-layer protocols that actually demand these services

A) MAC

B) LLC

C) LLU

D) none of the above

35. In the Ethernet, the _____field is actually added at the physical layer and is not (formally) part of the frame.

A) CRC

B) preamble

C) address

D) none of the above

36. In the Ethernet frame, the _____ field contains error detection information. A) CRC

B) preamble

C) address

D) none of the above

37. Standard Ethernet (10-Mbps) uses _____ encoding

A) NRZ

B) AMI

C) Manchester

D) differential Manchester

38. 100Base-TX uses _____ block coding and _____ line coding. A) 4B/5B; NRZ

B) 8B/10B; NRZ

C) 4B/5B; MLT-3

D) 8B/10B; NRZ

39. 100Base-FX uses _____ block coding and _____ line coding. A) 4B/5B; NRZ-I

B) 8B/10B; NRZ

C) 4B/5B; MLT-3

D) 8B/10B; NRZ

40. 100Base-T4 uses _____ line coding.

A) NRZ

B) 8B6T

C) MLT-3

D) Manchester

41. 1000Base-SX, 1000Base-LX, and 1000Base-CX use _____ block coding and _____ line coding.

A) 4B/5B; NRZ

B) 8B/10B; NRZ

C) 4B/5B; MLT-3

D) 8B/10B; NRZ

42. 1000Base-T uses _____ line coding.

A) 4D-PAM5

B) 8B6T

C) MLT-3

D) Manchester

ANSWERS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
D	B	A	A	C	C	A	A	C	C	D	A	A	B	C	D	B	B	A	B	C
22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
C	C	A	B	C	A	B	C	A	B	C	B	B	B	A	C	C	A	B	B	A

Part-15

1. In _____ each station sends a frame whenever it has a frame to send. A) pure ALOHA

B) slotted ALOHA

C) both (a) and (b)

D) neither (a) nor (b)

2. In pure ALOHA, the vulnerable time is _____ the frame transmission time. A) the same as

B) two times

C) three times

D) none of the above

3. The maximum throughput for pure ALOHA is _____ per cent.

A) 12.2

B) 18.4

C) 36.8

D) none of the above

4. In _____, each station is forced to send only at the beginning of the time slot.

A) pure ALOHA

B) slotted ALOHA

C) both (a) and (b)

D) neither (a) nor (b)

5. In slotted ALOHA, the vulnerable time is _____ the frame transmission time. A) the same as

B) two times

C) three times

D) none of the above

6. The maximum throughput for pure ALOHA is _____ per cent.

A) 12.2

B) 18.4

C) 36.8

D) none of the above

7. The vulnerable time for CSMA is the _____propagation time.

A) the same as

B) two times

C) three times

D) none of the above

8. In the _____ method, after the station finds the line idle, it sends its frame immediately. If the line is not idle, it continuously senses the line until it finds it idle.

A) nonpersistent

B) 1-persistent

C) p-persistent

D) none of the above

9. In the _____method, a station that has a frame to send senses the line. If the line is idle, it sends immediately. If the line is not idle, it waits a random amount of time and then senses the line again.

A) nonpersistent

B) 1-persistent

C) p-persistent

D) none of the above

10 In the _____method, after the station finds the line idle it sends or refrain from sending based on the outcome of a random number generator. If the line is busy, it tries again.

A) nonpersistent

B) 1-persistent

C) p-persistent

D) none of the above

11. We have categorized access methods into _____ groups.

A) two

B) three

C) four

D) five

12. In _____ methods, no station is superior to another station and none is assigned the control over another.

A) random access

B) controlled access

C) channelization

D) none of the above

13. In _____, the chance of collision can be reduced if a station senses the medium before trying to use it.

A) MA

B) CSMA

C) FDMA

D) CDMA

14. _____ requires that each station first listen to the medium before sending. A) MA

B) CSMA

C) FDMA

D) CDMA

15. _____ augments the CSMA algorithm to detect collision.

A) CSMA/CA

B) CSMA/CD

C) either (a) or (b)

D) both (a) and (b)

16. In _____, a station monitors the medium after it sends a frame to see if the transmission was successful. If so, the station is finished. If, however, there is a collision, the frame is sent again.

A) CSMA/CA

B) CSMA/CD

C) either (a) or (b)

D) both (a) and (b)

17. To avoid collisions on wireless networks, _____was invented. A) CSMA/CA

B) CSMA/CD

C) either (a) or (b)

D) both (a) and (b)

18. In _____, collisions are avoided through the use of three strategies: the interframe space, the contention window, and acknowledgments.

A) CSMA/CA

B) CSMA/CD

C) either (a) or (b)

D) both (a) and (b)

19. In _____ methods, the stations consult one another to find which station has the right to send.

A) random access

B) controlled access

C) channelization

D) none of the above

20. In _____ methods, a station cannot send unless it has been authorized by other stations.

A) random access

B) controlled access

C) channelization

D) none of the above

21. We discussed _____ popular controlled-access methods.

A) two

B) three

C) four

D) none of the above

22. In the _____ method, a station needs to make a reservation before sending data. Time is divided into intervals.

A) reservation

B) polling

C) token passing

D) none of the above

23. In the _____ method, time is divided into intervals. In each interval, a reservation frame precedes the data frames sent in that interval.

A) reservation

B) polling

C) token passing

D) none of the above

24. In the _____ method, all data exchanges must be made through the primary device even when the ultimate destination is a secondary device.

A) reservation

B) polling

C) token passing

D) none of the above

25. In the _____ method, the primary device controls the link; the secondary devices follow its instructions.

A) reservation

B) polling

C) token passing

D) none of the above

26. In the _____ method, the stations in a network are organized in a logical ring. A) reservation

B) polling

C) token passing

D) none of the above

27. In the _____ method, each station has a predecessor and a successor. A) reservation

B) polling

C) token passing

D) none of the above

28. In the _____ method, a special packet called a _____ circulates through the ring.

A) reservation: control frame

B) polling: poll request

C) token passing: token

D) none of the above

29. _____ is a multiple-access method in which the available bandwidth of a link is shared in time, frequency, or through code, between different stations.

A) Random access

B) Controlled access

C) Channelization

D) none of the above

30. We discussed _____ channelization protocols.

A) two

B) three

C) four

D) none of the above

31. In _____, the available bandwidth is divided into frequency bands. A) FDMA

B) TDMA

C) CDMA

D) none of the above

32. In _____, each station is allocated a band to send its data. In other words, each band is reserved for a specific station, and it belongs to the station all the time.

A) FDMA

B) TDMA

C) CDMA

D) none of the above

33. In _____, the stations share the bandwidth of the channel in time. A) FDMA

B) TDMA

C) CDMA

D) none of the above

34. In _____, each station is allocated a time slot during which it can send data. Each station transmits its data in its assigned time slot.

A) FDMA

B) TDMA

C) CDMA

D) none of the above

35. In _____, each station transmits its data in its assigned time slot. A) FDMA

B) TDMA

C) CDMA

D) none of the above

36. In _____, the stations use different codes to achieve multiple access. A) FDMA

B) TDMA

C) CDMA

D) none of the above

37. _____ is based on coding theory and uses sequences of numbers called chips. A) FDMA

B) TDMA

C) CDMA

D) none of the above

38. In _____, the sequences are generated using orthogonal codes such the Walsh tables.

A) FDMA

B) TDMA

C) CDMA

D) none of the above

ANSWERS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
A	B	B	B	A	C	A	B	A	C	B	A	B	B	B	B	A	A	B
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
B	B	A	A	B	B	C	C	C	C	B	A	A	B	B	B	C	C	C

Part-16

1. In the _____ Protocol, the sender sends its frames one after another with no regard to the receiver.

A) Stop-and-Wait

B) Simplest

C) Go-Back-N ARQ

D) Selective-Repeat ARQ

2. In the _____ Protocol, the sender sends one frame, stops until it receives confirmation from the receiver, and then sends the next frame.

A) Stop-and-Wait

B) Simplest

C) Go-Back-N ARQ

D) Selective-Repeat ARQ

3. The _____Protocol, adds a simple error control mechanism to the _____Protocol.

A) Stop-and-Wait ARQ; Stop-and-Wait

B) Go-Back-N ARQ; Stop-and-Wait

C) Selective Repeat ARQ; Go-Back-N ARQ

D) none of the above

4. In the _____Protocol, if no acknowledgment for a frame has arrived, we resend all outstanding frames.

A) Stop-and-Wait ARQ

B) Go-Back-N ARQ

C) Selective-Repeat ARQ

D) none of the above

5. In the _____ protocol we avoid unnecessary transmission by sending only frames that are corrupted.

A) Stop-and-Wait ARQ

B) Go-Back-N ARQ

C) Selective-Repeat ARQ

D) none of the above

6. Both Go-Back-N and Selective-Repeat Protocols use a _____. A) sliding frame

B) sliding window

C) sliding packet

D) none of the above

7. In Go-Back-N ARQ, if 5 is the number of bits for the sequence number, then the maximum size of the send window must be _____

A) 15

B) 16

C) 31

D) 1

8. In Go-Back-N ARQ, if 5 is the number of bits for the sequence number, then the maximum size of the receive window must be _____

A) 15

B) 16

C) 31

D) 1

9. In Selective Repeat ARQ, if 5 is the number of bits for the sequence number, then the maximum size of the send window must be _____

A) 15

B) 16

C) 31

D) 1

10. In Selective Repeat ARQ, if 5 is the number of bits for the sequence

number, then the maximum size of the receive window must be _____

A) 15

B) 16

C) 31

D) 1

11. High-level Data Link Control (HDLC) is a _____ protocol for communication over point-to-point and multipoint links.

A) bit-oriented

B) byte-oriented

C) character-oriented

D) none of the above

12. The most common protocol for point-to-point access is the Point-to-Point Protocol (PPP), which is a _____protocol.

A) bit-oriented

B) byte-oriented

C) character-oriented

D) none of the above

13. _____ control refers to a set of procedures used to restrict the amount of data that the sender can send before waiting for acknowledgment.

A) Flow

B) Error

C) Transmission

D) none of the above

14. _____control in the data link layer is based on automatic repeat request, which is the retransmission of data.

A) Flow

B) Error

C) Transmission

D) none of the above

15. In Stop-and-Wait ARQ, we use sequence numbers to number the frames. The sequence numbers are based on _____arithmetic.

A) modulo-2

B) modulo-4

C) modulo-m

D) none of the above

16. In Stop-and-Wait ARQ, the acknowledgment number always announces in _____ arithmetic the sequence number of the next frame expected.

A) modulo-2

B) modulo-4

C) modulo-m

D) none of the above

17. In the Go-Back-N Protocol, if the size of the sequence number field is 8, the sequence numbers are in _____ arithmetic,

A) modulo-2

B) modulo- 8

C) modulo-256

D) none of the above

18. Stop-and-Wait ARQ is a special case of Go-Back-N ARQ in which the size of the send window is 1.

A) 2

B) 1

C) 8

D) none of the above

19. In _____, the station configuration is unbalanced. We have one primary station and multiple secondary stations.

A) ABM

B) NRM

C) ARM

D) NBM

20. In _____, the configuration is balanced. The link is point-to-point, and each station can function as a primary and a secondary.

A) ABM

B) NRM

C) ARM

D) NBM

21. In PPP, the _____ is responsible for establishing, maintaining, configuring, and terminating links.

A) NCP

B) LCP

C) CHAP

D) PAP

22. In PPP, _____ is a simple authentication procedure with a two-step process:

A) NCP

B) LCP

C) CHAP

D) PAP

23. In PPP, _____ is a three-way hand-shaking authentication protocol in which the password is kept secret; it is never sent online.

A) NCP

B) LCP

C) CHAP

D) PAP

ANSWERS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
B	A	A	B	C	B	C	D	B	B	A	B	A	B	A	A	C	B	B	A	B	D		

Part-17

1. In a Go-Back-N ARQ, if the window size is 63, what is the range of sequence numbers?

A) 0 to 63

B) 0 to 64

C) 1 to 63

D) 1 to 64

2. In Go-Back-N ARQ, if frames 4, 5, and 6 are received successfully, the receiver may send an ACK _____ to the sender.

A) 5

B) 6

C) 7

D) any of the above

3. ARQ stands for _____.

A) Automatic repeat quantization

B) Automatic repeat request

C) Automatic retransmission request

D) Acknowledge repeat request

4. For Stop-and-Wait ARQ, for 10 data packets sent, _____ acknowledgments are needed.

A) exactly 10

B) less than 10

C) more than 10

D) none of the above

5. HDLC is an acronym for _____.

A) High-duplex line communication

B) High-level data link control

C) Half-duplex digital link combination

D) Host double-level circuit

6. Data link control deals with the design and procedures for _____ communication.

A) node-to-node

B) host-to-host

C) process-to-process

D) none of the above

7. _____ in the data link layer separates a message from one source to a destination, or from other messages going from other sources to other destinations.

A) Digitizing

B) Controlling

C) Framing

D) none of the above

8. In _____ framing, there is no need for defining the boundaries of frames. A) fixed-size

B) variable-size

C) standard

D) none of the above

9. In _____ framing, we need a delimiter (flag) to define the boundary of two frames.

A) fixed-size

B) variable-size

C) standard

D) none of the above

10. _____framing uses two categories of protocols: character-oriented and bit oriented.

A) Fixed-size

B) Variable-size

C) Standard

D) None of the above

11. In a _____ protocol, the data section of a frame is a sequence of characters. A) bit-oriented

B) character-oriented

C) either (a) or (b)

D) none of the above

12. In a _____ protocol, the data section of a frame is a sequence of bits. A) byte-oriented

B) bit-oriented

C) either (a) or (b)

D) none of the above

13. In _____ protocols, we use _____.

A) character-oriented; byte stuffing

B) character-oriented; bit stuffing

C) bit-oriented; character stuffing

D) none of the above

14. Byte stuffing means adding a special byte to the data section of the frame when there is a character with the same pattern as the _____.

A) header

B) trailer

C) flag

D) none of the above

15. In _____ protocols, we use _____.

A) byte-oriented; bit stuffing

B) character-oriented; bit stuffing

C) bit-oriented; bit stuffing

D) none of the above

16. Bit stuffing means adding an extra 0 to the data section of the frame when there is a sequence of bits with the same pattern as the _____.

A) header

B) trailer

C) flag

D) none of the above

17. _____ control refers to a set of procedures used to restrict the amount of data that the sender can send before waiting for acknowledgment.

A) Flow

B) Error

C) Transmission

D) none of the above

18. _____ control refers to methods of error detection and correction. A) Flow

B) Error

C) Transmission

D) none of the above

19. The Simplest Protocol and the Stop-and-Wait Protocol are for _____ channels. A) noisy

B) noiseless

C) either (a) or (b)

D) neither (a) nor (b)

20. The Stop-And-Wait ARQ, Go-Back-N ARQ, and the Selective Repeat ARQ are for _____ channels.

A) noisy

B) noiseless

C) either (a) or (b)

D) neither (a) nor (b)

21. The ____ Protocol has neither flow nor error control.

A) Stop-and-Wait

B) Simplest

C) Go-Back-N ARQ

D) Selective-Repeat ARQ

22. The _____Protocol has flow control, but not error control.

A) Stop-and-Wait

B) Simplest

C) Go-Back-N ARQ

D) Selective-Repeat ARQ

23. The _____Protocol has both flow control and error control.

A) Stop-and-Wait

B) Go-Back-N ARQ

C) Selective-Repeat ARQ

D) both (b) and (c)

Answers:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
A	C	B	A	B	A	C	A	B	B	B	B	A	C	C	C	A	B	B	A	B	A	D

Part-18

1. Which error detection method uses one's complement arithmetic?
A) Simple parity check

B) Two-dimensional parity check

C) CRC

D) Checksum

2. Which error detection method consists of just one redundant bit per data unit? A) Simple parity check

B) Two-dimensional parity check

C) CRC

D) Checksum

3. In cyclic redundancy checking, what is the CRC?

A) The divisor

B) The quotient

C) The dividend

D) The remainder

4. In cyclic redundancy checking, the divisor is _____ the CRC. A) The same size as

B) one bit less than

C) one bit more than

D) none of the above

5. A burst error means that two or more bits in the data unit have changed. A) double-bit

B) burst

C) single-bit

D) none of the above

6. In _____ error correction, the receiver corrects errors without requesting retransmission.

A) backward

B) onward

C) forward

D) none of the above

7. In _____ error correction, the receiver asks the sender to send the data again. A) backward

B) retransmission

C) forward

D) none of the above

8. We can divide coding schemes into two broad categories: _____ and _____coding. A) block; linear

B) linear; nonlinear

C) block; convolution

D) none of the above

9. In modulo-2 arithmetic, _____ give the same results.

A) addition and multiplication

B) addition and division

C) addition and subtraction

D) none of the above

10. In modulo-2 arithmetic, we use the _____ operation for both addition and subtraction. A) XOR

B) OR

C) AND

D) none of the above

11. In _____ coding, we divide our message into blocks, each of k bits, called ___. A) block; blockwords

B) linear; datawords

C) block; datawords

D) none of the above

12. We add r redundant bits to each block to make the length n = k + r. The resulting n-bit blocks are called _____.

A) datawords

B) blockwords

C) codewords

D) none of the above

13. The _____ between two words is the number of differences between corresponding bits.

A) Hamming code

B) Hamming distance

C) Hamming rule

D) none of the above

14. To guarantee the detection of up to 5 errors in all cases, the minimum Hamming distance in a block code must be _____.

A) 5

B) 6

C) 11

D) none of the above

15. To guarantee correction of up to 5 errors in all cases, the minimum Hamming distance in a block code must be _____.

A) 5

B) 6

C) 11

D) none of the above

16. In a linear block code, the _____ of any two valid codewords creates another valid codeword.

A) XORing

B) ORing

C) ANDing

D) none of the above

17. A simple parity-check code can detect _____ errors.

A) an even-number of

B) two

C) no errors

D) an odd-number of

18. _____codes are special linear block codes with one extra property. If a codeword is rotated, the result is another codeword.

A) Non-linear

B) Convolution

C) Cyclic

D) none of the above

19. The _____of errors is more difficult than the _____.

A) correction; detection

B) detection; correction

C) creation; correction

D) creation; detection

20. In modulo-11 arithmetic, we use only the integers in the range _____, inclusive. A) 1 to 10

B) 1 to 11

C) 0 to 10

D) none of the above

21. In modulo-2 arithmetic, we use only _____.

A) 1 and 2

B) 0 and 2

C) 0 and 1

D) none of the above

22. Adding 1 and 1 in modulo-2 arithmetic results in _____. A) 1

B) 2

C) 0

D) none of the above

23. In block coding, if k =2 and n =3, we have _____ invalid codewords. A) 8

B) 4

C) 2

D) none of the above

24. The Hamming distance between equal codewords is _____. A) 1

B) n

C) 0

D) none of the above

25. The Hamming distance between 100 and 001 is _____. A) 2

B) 0

C) 1

D) none of the above

26. In block coding, if n = 5, the maximum Hamming distance between two codewords is _____.

A) 2

B) 3

C) 5

D) none of the above

27. If the Hamming distance between a dataword and the corresponding codeword is three, there are _____ bits in error.

A) 3

B) 4

C) 5

D) none of the above

28. The _____ of a polynomial is the highest power in the polynomial. A) range

B) degree

C) power

D) none of the above

29. The divisor in a cyclic code is normally called the _____.

A) degree

B) generator

C) redundancy

D) none of the above

30. A generator that contains a factor of ____ can detect all odd-numbered errors. A) x

B) x + 1

C) 1

D) none of the above

31. Checksums use _____ arithmetic.

A) two's complement arithmetic

B) one's complement arithmetic

C) either (a) or (b)

D) none of the above

32. In one's complement arithmetic, if positive 7 is 0111, then negative 7 is _____. A) 1111

B) 1101

C) 1000

D) none of the above

33. The checksum of 1111 and 1111 is _____.

A) 1111

B) 0000

C) 1110

D) 0111

34. The checksum of 0000 and 0000 is _____.

A) 1111

B) 0000

C) 1110

D) 0111

Answers:

1	2	3	4	5	6	7	8																																
										C	C	B	B	C	A	D			C	C	C	B	C	A	C	A	B	B												

Part-19

1. A local telephone network is an example of a _____ network.

A) packet-switched

B) circuit-switched

C) message-switched

D) none of the above

2. The local loop has _____ cable that connects the subscriber telephone to the nearest end office.

A) twisted-pair

B) coaxial

C) fiber-optic

D) none of the above

3. Data from a computer are _____; the local loop handles _____ signals. A) analog; analog

B) analog; digital

C) digital; digital

D) digital; analog

4. _____ is suitable for businesses that require comparable upstream and downstream data rates.

A) VDSL

B) ADSL

C) SDSL

D) (a) and (b)

5. DMT is a modulation technique that combines elements of _____ and _____. A) FDM; TDM

B) QDM; QAM

C) FDM; QAM

D) PSK; FSK

6. The largest portion of the bandwidth for ADSL carries _____. A) voice communication

B) upstream data

C) downstream data

D) control data

7. _____ was designed as an alternative to the T-1 line. A) VDSL

B) ADSL

C) SDSL

D) HDSL

8. HDSL encodes data using _____.

A) 4B/5B

B) 2B1Q

C) 1B2Q

D) 6B/8T

9. Another name for the cable TV office is the _____. A) splitter

B) fiber node

C) combiner

D) head end

10. A traditional cable TV network transmits signals _____. A) upstream

B) downstream

C) upstream and downstream

D) none of the above

11. In an HFC network, the downstream data are modulated using the _____ modulation technique.

A) PSK

B) QAM

C) PCM

D) ASK

12. In an HFC network, the upstream data are modulated using the _____ modulation technique.

A) QAM

B) QPSK

C) PCM

D) ASK

13. The standard for data transmission over an HFC network is called _____. A) MCNS

B) DOCSIS

C) CMTS

D) ADSL

14. The original telephone network, which is referred to as the plain old telephone system (POTS), was an _____ system.

A) digital

B) analog

C) digital as well as analog

D) none of the above

15. The modern telephone network is now _____. A) digital

B) analog

C) digital as well as analog

D) none of the above

16. The telephone network is made of _____ major components. A) 2

B) 3

C) 4

D) none of the above

17. The United States is divided into many _____. A) LECs

B) LATAs

C) IXCs

D) none of the above

18. The carrier that handles intra-LATA services is called a(n) _____ . A) POP

B) IXC

C) LEC

D) none of the above

19. The carrier that handles inter-LATA services is called a(n) _____. A) POP

B) IXC

C) LEC

D) none of the above

20. In _____signaling, the same circuit is used for both signaling and data. A) in-band

B) out-of-band

C) mixed

D) none of the above

21. In _____signaling, a portion of the bandwidth is used for signaling and another portion for data.

A) in-band

B) out-of-band

C) mixed

D) none of the above

22. The protocol that is used for signaling in the telephone network is called _____. A) POP

B) SSS

C) SS7

D) none of the above

23. Telephone companies provide two types of analog services: analog _____ services and analog _____services.

A) switched; in-band

B) out-of-band; in-band

C) switched; leased

D) leased; out-of-band

24. The two most common digital services are _____ service and _____. A) switched/56; switched/64

B) switched/56; DDS

C) DDS; swiched 64

D) leased; out-of-band

25. The term modem is a composite word that refers to the two functional entities that make up the device: a signal _____ and a signal _____.

A) modulator; demodulator

B) demodulator; modulator

C) modern; demo

D) none of the above

26. Most popular modems available are based on the _____standards.

A) V-series

B) X-series

C) VX-series

D) none of the above

27. _____technology is a set of technologies develpoed by the telephone companies to provide high data rate transmission.

A) ASL

B) DSL

C) LDS

D) none of the above

28. The traditional cable TV system used _____cable end to end. A) twisted-pair

B) coaxial

C) fiber-optic

D) none of the above

29. The second generation of cable networks is called a(n) _____ network. A) HFC

B) HCF

C) CFH

D) none of the above

30. The HFC network uses _____ cable.

A) twisted-pair

B) coaxial

C) fiber-optic

D) a combination of (b) and (c)

31. To use a cable network for data transmission, we need two key devices: a _____ and a _____

A) CM; CMS

B) CT; CMTS

C) CM; CMTS

D) none of the above

ANSWERS:

1	2	3	4	5	6	7	8																					
			D			D	B	D	B	B	B	B			B							BCC			BAA		B			

Part-20

1. Traditionally, _____ methods of switching have been important.

A) four

B) three

C) five

D) six

2. We can divide today's networks into ____ broad categories.

A) four

B) three

C) five

D) two

3. Packet-switched networks can also be divided into _____subcategories: virtual-circuit networks and datagram networks

A) four

B) three

C) two

D) five

4. A _____ network is made of a set of switches connected by physical links, in which each link is divided into n channels.

A) line-switched

B) frame-switched

C) circuit-switched

D) none of the above

5. Circuit switching takes place at the _____ layer.

A) data line

B) physical

C) network

D) transport

6. In _____, the resources need to be reserved during the setup phase; the resources remain dedicated for the entire duration of data transfer phase until the teardown phase.

A) datagram switching

B) circuit switching

C) frame switching

D) none of the above

7. In _____, there is no resource allocation for a packet. A) datagram switching

B) circuit switching

C) frame switching

D) none of the above

8. In _____, resources are allocated on demand. A) datagram switching

B) circuit switching

C) frame switching

D) none of the above

9. In _____, each packet is treated independently of all others. A) datagram switching

B) circuit switching

C) frame switching

D) none of the above

10. In _____ there are no setup or teardown phases. A) datagram switching

B) circuit switching

C) frame switching

D) none of the above

11. A _____ network is a cross between a circuit-switched network and a datagram network. It has some characteristics of both.

A) virtual-circuit

B) packet-switched

C) frame-switched

D) none of the above

12. We can say that a packet switch has _____ types of components. A) two

B) three

C) four

D) none of the above

13. The simplest type of switching fabric is the _____ switch.

A) crosspoint

B) crossbar

C) TSI

D) STS

14. A _____ switch is a multistage switch with microswitches at each stage that route the packets based on the output port represented as a binary string.

A) crossbar

B) TSI

C) banyan

D) none of the above

15. In a banyan switch, for 8 inputs and 8 outputs, we have _____ stages. A) 8

B) 4

C) 3

D) 2

16. In a banyan switch, for 8 inputs and 8 outputs, we have _____ microswitches at each stage.

A) 8

B) 4

C) 3

D) 2

17. A _____ switch combines space-division and time-division technologies to take advantage of the best of both.

A) TST

B) SSS

C) TTT

D) none of the above

18. The most popular technology in time-division switching is called the _____.

A) STI

B) ITS

C) TSI

D) none of the above

19. Based on the Clos criteria, if N = 200, then n must be equal to or

greater than ____. A) 10

B) 20

C) 30

D) 40

20. Based on the Clos criteria, if N = 200, then k must be equal to or greater than ____. A) 21

B) 19

C) 31

D) 41

21. Based on the Clos criteria, if N = 200, then the minimum number of crosspoints is greater than or equal to _____.

A) 15,200

B) 18,000

C) 42,000

D) 20,000

22. In a one-stage space division switch, if N = 200, the number of crosspoints is _____.

A) 10,000

B) 20,000

C) 40,000

D) 30,000

23. In a three-stage space division switch, if N = 200, the number of crosspoints is _____. A) 40,000

B) greater than 40,000

C) less than 40,000

D) greater than 100,000

24. A _____ switch combines crossbar switches in several (normally three) stages. A) multistage

B) multiple crossbar

C) multiple path

D) none of the above

25. In _____ switching, the paths in the circuit are separated from one another spatially. A) time-division

B) space-division

C) two-dimensional

D) three-dimensional

26. A switched WAN is normally implemented as a _____ network. A) virtual-circuit

B) datagram

C) circuit-switched

D) none of the above

27. In a _____ network, two types of addressing are involved: global and local. A) virtual-circuit

B) datagram

C) circuit-switched

D) none of the above

28. The network layer in the Internet is designed as a _____ network. A) virtual-circuit

B) datagram

C) circuit-switched

D) none of the above

29. A switch in a datagram network uses a routing table that is based on the _____ address.

A) source

B) destination

C) local

D) none of the above

30. The _____ address in the header of a packet in a datagram network normally remains the same during the entire journey of the packet.

A) source

B) destination

C) local

D) none of the above

ANSWERS:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
B	B	C	C	B	B	A	A	A	A	A	C	B	C	C	B	A	C	A	B	A	C	C	A	B	A	A	B	B	A

Happy Learning!