Computer Networks

Unit 1 Introduction of Computer Networks

1. A _____ is the physical path over which a message travels.
   a. Path
   b. Medium
   c. Protocol
   d. Route
2. What is broadcast?
   a. Sent to many
   b. Sent to one
   c. Sent to many at same time
   d. Sent to many at different time
3. What is bandwidth
   a. Transfer rate
   b. Completion rate
   c. Failure rate
   d. Error rate
4. ISO stands for
   a. International Standard Organization
   b. Internal Standard Organization
   c. Interconnected Standard Organization
   d. Interrelated Standard Organization
5. Application of TCP/IP
   a. Military
   b. University
   c. Government agency
   d. All of above
6. Which one is lowest layer of TCP/IP?
   a. Application
   b. Presentation
   c. Host to network
   d. Session
7. What is topology?
   a. Arrangement of devices
   b. Arrangement of topology
   c. Connection of topology
   d. Connection of devices
8. Three or more devices share a link in _____ connection.
   a. Unipoint

b. Multipoint
c. Point to point
d. Simplex

9._____ is the technology that connects the machines and people within a site in a small area.
a. LAN
b. MAN
c.WAN
d. None of these

10. OSI stands for
a. Open System Interconnection
b. Open System Interchange
c. Open Structure Interconnection
d. Open Structure Interchange

11. Which transmission media has the highest transmission speed in a network?
a. Twisted pair cable
b. Coaxial cable
c. Fiber optical
d. Electrical cable

12. Wireless transmission can be done via
a. Radio waves
b. Micro waves
c. Infrared waves
d. All of above

13. A set of rules that manages all aspects of data communication is called_____
a. Protocol
b. Topology
c. Server
d. OSI Model

14. What is the full form of ISO?
a. International Systems Organization
b. International Standard Occupation
c. Indian Standard Organization
d. International Standard Organization

15. What is the full form of IEEE?
a. Institute of Electrical and Electronics Engineering
b. International of Electrical and Electronics Engineers
c. Institute of Electrical and Electronics Engineers
d. Intercommunication of Electrical and Electronics Engineers

16. Which network topology requires a central controller or hub?
a. Star

b. Mesh
c. Ring
d. Bus

17. A topology that involves tokens.
    a. Bus
    b. Ring
    c. Mesh
    d. Star
18. Which topology is combination of two or more topologies?
    a. Star
    b. Bus
    c. Ring
    d. Hybrid
19. In which topology disable of central controller can affect the whole network?
    a. Ring
    b. Star
    c. tree
    d. Bus
20. In which topology break the backbone cable can affect the whole netwok?
    a. Bus
    b.Ring
    c. Star
    d. mesh
21. LAN stands for_____
    a. Local Area Network
    b. Land Area Network
    c. List Area Network
    d. Least Area Network
22. What is role of datalink layer?
    a. Error detection
    b. Encoded data
    c. Assembled data to frame
    d. All of above
23. Media Access Control sublayer resides in which OSI layer?
    a. Transport
    b. Network
    c. Physical
    d. Data Link
24. Routers operate at which layer of the OSI model?
    a. Transport

b. Network
c. Physical
d. Data Link

25. Bits are packaged into frames at which layer of the OSI model?
    a. Transport
    b. Network
    c. Physical
    d. Data Link
26. The layers of the OSI model, from the top down, are:
    a. application, presentation, session, transport, network, data link, physical
    b. session, presentation, data transport, MAC, network, physical
    c. physical, data link, network, transport, session, presentation, application
    d. presentation, application, session, network, transport, data link, physical
27. Which of the following are transport layer protocols?
    a. TCP and UDP
    b. IP
    c. FTAM
    d. IP and TFTP
28. IP is implemented at which OSI model layer?
    a. Transport
    b. Network
    c. Physical
    d. Data Link
29. _____ cable consists of an inner copper core and a second conducting outer sheath.
    a. Twisted-pair
    b. Shielded twisted-pair
    c. Coaxial
    d. Fiber-optic
30. _____ cable consists of two insulated copper wires twisted together.
    a. Twisted-pair
    b. Coaxial
    c. Fiber-optic
    d. None of above
31. Transmission media are usually categorized as _____.
    a. Determinate or indeterminate
    b. Fixed or unfixed
    c. Guided or unguided
    d. Metallic or nonmetallic
32. Which of the following is not a guided medium?
    a. Fiber-optic cable

b. Coaxial cable
c. Twisted-pair cable
d. Atmosphere

33. Which one of following protocol is not used at datalink layer?
a. X.25
b. SDLC
c. HDLC
d. FTP

34. What is function of physical layer?
a. To maintain the connection
b. Flow control
c. Error correction
d. None of above

35. OSI has _____layers
a. 7
b. 4
c. 6
d. 5

36 Which one of following protocol is type of coaxial cable?
a. Thinner
b. STP
c. UTP
d. Single node

37. TCP/IP has _____layers
a. 7
b. 4
c. 6
d. 3

38. Which one layers of OSI model is responsible for reliable process-to-process message delivery.
a. Transport layer
b. Physical layer
c. Data link layer
d. Application layer

39. Which one of following is line configuration?
a. Point to point
b. Simplex
c. Duplex
d. None of above

40. Which one of following is not network device?
a. Switch

b. Bridge
c. LAN
d. Gateway

41. In _____ power loss occurs due to absorption, scattering, dispersion and bending.
a. Optical fiber
b. Co-axial
c. UTP
d. STP

42. UTP stands for _____
a. Unshielded Twisted Pair
b. Unsoiled Twisted Pair
c. Unguided Twisted Pair
d. Uncoated Twisted Pair

43. Advantage of bus topology over other topologies is(are)
a. Cable cost is less
b. It is easy to understand topology
c. Easy to connect or remove devices in a network without affecting any other device.
d. All of above

44. TCP/IP stands for
a. Transmission Control Protocol / Internet Protocol
b. Transform Control Protocol/Internet Protocol
c. Transformation Control Protocol/ Internet Protocol
d. Transition Control Protocol/ Internet Protocol

45. _____ is a communication channel that carries the information from the sender to the receiver.
a. Topology
b. Server
c. Transmission Mode
d. Transmission Media

46. How many pairs of cable in twisted pair cable?
a. 2
b. 4
c. 6
4. 8

47. Twisted of wires pair cable helps to
a. Reduce the effect of noise or external interface
b. Increase the data speed
c. Make the cable attractive
d.Make the cable stronger

48. What is the type of twisted pair cable?
    a. UTP
    b. STP
    c. UDP
    d. both a and b
49. Thinnet cable can carry a signal up to how many meters?
    a. 180 meters
    b. 185 meters
    c. 190 meters
    d. 195 meters
50. Which cable is carry data signals in the form of light?
    a. Fiber-optic cable
    b. Coaxial cable
    c. Twisted-pair cable
    d. None of above

Unit 2The Data Link Layer

1.Which of the following functions is of Data Link Layer?

a. Regulating the flow of data so that slow receivers are not swamped by fast senders
b. Dealing with transmission errors
c. Providing a well-defined service interface to the network layer
d. All of Above

2.At Data Link Layer , breaking up the bit stream into discrete frames, compute a short token called_____for each frame

a. Byte Count
b. CheckSum
c. byte stuffing
d. code violations

3. Which framing method uses a field in the header to specify the number of bytes in the frame?

a. Byte Count
b. CheckSum
c. byte stuffing
d. code violations

4. Which framing method gets around the problem of resynchronization after an error by having each frame start and end with special bytes?

a. Byte Count
b. CheckSum
c. Flag bytes with byte stuffing
d. code violations

5.Which framing techniques ensures a minimum density of transitions that help the physical layer maintain synchronization and escape byte is stuffed into the outgoing character stream before a flag byte in the data?

a. Byte Count
b. CheckSum
c. Flag bytes with byte stuffing
d. bit stuffing

6. A common pattern used for Ethernet and 802.11 is to have a frame begin with awell-defined pattern called a_____.

a. byte stuffing
b. bit stuffing
c. preamble
d. coding violations

7. The ability of the receiver to both detect and correct errors is known as ….that can be used by in conjunction with link-layer ARQ techniques .

a. Forward error correction (FEC).
b. Backward error correction(BEC)

c. Error Transmission Correction(ETC)

d. Error Code Detection(ECD)

8.Tick Proper Name of Technique which describe by below statement:

"the receiver sends back information to the sender giving it permission to send more data, or at least telling the sender how the receiver is doing."

a. feedback-based flow control

b. rate-based flow control,

c. speed based flow control

d. message based fow control

9. Sometimes, the location of an error will be known, perhaps because the physical layer received an analog signal that was far from the expected value for a 0 or 1 and declared the bit to be lost. This situation is called an …

a. measure channel

b. preamble

c. erasure channel

d. isolate channel

10. In a which type of code , the *m* data bits are sent directly, along with the check bits, rather than being encoded themselves before they are sent.?

a. convolutional code.

b. linear code

c. systematic coded.

d. block code

11.which is the fraction of the codeword that carries information that is not redundant and used in practice vary widely?

a. code rate

b. frame rate

c. message rate

d. network rate

12. The number of bit positions in which two codewords differ is called the _____

a. Hamming distance.

b. code distance

c. frame distance

d. Solomon distance

13.Deciding whether each bit is a 0 or a 1 before subsequent error correction is called …..

a. hard-decision decoding

b. soft-decision decoding

c. hard-decision encoding

d. soft-decision encoding

14.Which type of codes are actually defined as polynomials that operate over finite fields, but they work in a similar manner. For *m* bit symbols, the codewords are 2^m - 1 symbols long.

a. Binary convolutional codes
b. Hamming Code
c. Reed-Solomon codes
d. Low-Density Parity Check codes

15. In which type of code, each output bit is formed from only a fraction of the input bits and are practical for large block sizes and have excellent error-correction abilities

a. Binary convolutional codes
b. Hamming Code
c. Reed-Solomon codes
d. Low-Density Parity Check codes

16.CRC is also known as.

a. Fletcher's checksum
b. polynomial code
c. coefficients code
d. uniform code

17.Select Proper options for following Polynomial arithmetic of CRC:

10011011
+ 11001010

a. 11101101
b. 10101110
c. 01010001
d. 01100010

18. When the polynomial code method is employed, the sender and receiver must agree upon a_____.

a. Polynomial arithmetic
b. Transmission error
c. Generator polynomial
d. Frame error

19. The physical layer process and some of the data link layer process run on dedicate hardware called a_____

a. Network Interface Card
b. Network Identity Card
c. Network International Card
d. Network Integrate Card

20. A frame is composed of four fields: kind, seq, ack, and info.
Which three of which contain control information and the last of which may contain actual data to be transferred.

a. kind, seq, and ack,

b. seq, ack, and info
c. kind, ack, and info
d. kind ,seq, and info

21.Which Protocols in which the sender sends one frame and then waits for ancknowledgement before proceeding?

a. Sliding Window
b. ARQ
c. stop-and-wait
d. None of above

22. Temporarily delaying outgoing acknowledgements so that they can be hooked onto the next outgoing data frame is known as _____

a. piggybacking
b. piggytracking
c. piggybagging
d. piggyrouting

23.The sender maintains a set of sequence numbers corresponding to frames it is permitted to send. These frames are said to fall within the which type of window?

a. receiving window
b. medium window
c. sending window.
d. error window

24. When an acknowledgement comes in for frame *n*, frames *n* -1, *n* -2, and so on are also automatically acknowledged. This type of acknowledgement is called a _____

a. series acknowledgement
b. cumulative acknowledgement
c. incremental acknowledgement
d. numeric acknowledgement

25. The PPP frame format was chosen to closely resemble the frame format of _____ a widely used instance of an earlier family of protocols, since there was no need to reinvent the wheel.

a. HDLC (High-level Data Link Control)
b. LDLC (Low-level Data Link Control)
c. MDLC (Medium-level Data Link Control)
d. ADLC (Average-level Data Link Control)

26.Which type of control provides reliable transmission with a sliding window, acknowledgements, and timeouts in the Manner.

a. HDLC (High-level Data Link Control)
b. LDLC (Low-level Data Link Control)
c. MDLC (Medium-level Data Link Control)
d. ADLC (Average-level Data Link Control)

27.Which of the follwing 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. Network

28.A transmitting node encapsulates the datagram in a ……. and transmits the frame into the link.

a. link-layer frame
b. physical layer datagram
c .network layer packet
d. transport layer segment

29. All CRC calculations are done in modulo-2 arithmetic,
Calculate following arithmetic bitwise exclusive-or (XOR).
1011 XOR 0101 = …….

a. 0101
b. 1011
c. 1110
d. 1000

30. CRC stands for _____

a. cyclic redundancy check
b. code repeat check
c. code redundancy check
d. cyclic repeat check

31. The data link layer takes the packets it gets from the network layer and encapsulates them into _____for transmission.

a. Frame
b. Segment
c. Packet
d. Data

32. When connection-oriented service is used, transfers go through how many distinct phases?

a. 3
b. 2
c. 5
d. 4

33. In which phase of connection-oriented services, the connection is established by having both sides initialize variables and counters needed to keep track of which frames have been received and which ones have not_____?

a. First
b. Second
c. Third
d. Fouth

34. In which of connection-oriented services, one or more frames are actually transmitted.
    a. First
    b. Second
    c. Third
    d. Fouth
35. In the sliding window method of flow control, the receiver window _____ size when frames are received.
    a. Increases in
    b. Decreases in
    c. Doubles in
    d. Remains its original
36. In the sliding window method of flow control, the receiver window _____ size when an ACK is sent.
    a. increases in
    b. decreases in
    c. doubles in
    d. remains its original
37. A sender has a sliding window of size 15. The first 15 frames are sent. The first ACK received is ACK 15. What frame is the receiver expecting?
    a. frame 14
    b. frame 15
    c. frame 16
    d. frame 0
38. A sender has a sliding window of size 15. The first 10 frames are sent. How many frames are in the window now?
    a. 4
    b. 5
    c. 6
    d. 10
39. A sender has a sliding window of size 15. The first 15 frames are sent. The receiver receives 10 frames. How many frames can the receiver still receive?
    a. 4
    b. 5
    c. 6
    d. 10
40. Flow control is mainly a function of the _____ layer
    a. Application
    b. Datalink
    c. Physical
    d. Network
41._____ is the regulation of the amount of data that can be sent.
    a. All of below
    b. Flow control
    c. Error control
    d. Line discipline

42. In the stop-and-wait method of flow control, the sender sends _____ at a time
    a. one frame
    b. two frame
    c. three frame
    d. a variable number of frames
43. Which of the following layers of the OSI reference model resolve problems of damaged or lost or duplicate frames?
    a. Physical
    b. Network
    c. Data link layer
    d. Session
44. The data link layer in the IEEE standard is divided into two sub layers of
    a. MAC and ACKs
    b. LAN and MAC
    c. LLC and NLC
    d. LLC and MAC
45. Automatic repeat request error management mechanism is provided by
    a. Logical Link Control sublayer
    b. Media Access Control sublayer
    c. Network Interface Control sublayer
    d. None of above
46.Header of a frame generally contains:
    a. Synchronization bytes
    b. Addresses
    c. Frame identifier
    d. All of above
47.When 2 or more bits in a data unit have been changed during the transmission, the error is called:
    a. Random error
    b. Burst error
    c. Inverted error
    d. None of above
48. Which of the following is used on noisy channels because retransmissions are just as likely to be in error as the first transmission?
    a. Forward error correction (FEC).
    b. Backward error correction(BEC)
    c. Error Transmission Correction(ETC)
    d. Error Code Detection(ECD)
49) Error-detecting codes are commonly used in which layer?
    a. Data Link layer
    b. Network layer
    c. Transport Layer
    d. All of above
50. In Operation of ARQ system, the decoder will send a which of the following acknowledgement when there is no error into message at receiver side.
    a. Positive acknowledgement

b. Negative acknowledgement
c. No error acknowledgement
d. Error less acknowledgement

Unit3 The Medium Access Control Layer

1. MAC stands for _____
   a. Media Area Control
   b. Memory Access Control
   c. Memory Area Control
   d. Media Access Control
2. MAC address also known as _____.
   a. Hardware address
   b.IP address
   c.software address
   d.None of above
3. MAC address is of how many bits
   a. 24 bit
   b. 32 bit
   c. 48 bit
   d. 128 bit
4. MAC address is written in which format
   a. Binary format
   b. Simple numeric format
   c. Hexa decimal format
   d. none of above
5. This is what happens if two devices on the same Ethernet network determine the network is free, but attempt to transmit data at exactly the same time.
   a. Overlap
   b. Crossover
   c. Collision
   d. None of the above
6. Give the full form of CSMA/CD.
   a. Carrier Sense Multiple Access/Carrier Detection
   b. Carrier Sense Multiple Access/Collision Detection
   c. Collision Sense Multiple Access/Collision Detection
   d. Collision Sense Multiple Access/Carrier Detection
7. 802.11 wireless networking uses what method as the media access method?
   a. CSMA/CD
   b. CTS/RTS
   c. CSMA/CA

d. CSCD/CA

8. 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)

9. 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

10. The maximum throughput for pure ALOHA is _____ per cent.
   a.12.2
   b.18.4
   c.36.8
   d. None of the above

11. 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)

12. The maximum throughput for slotted ALOHA is _____ per cent.
   a. 12.2
   b. 18.4
   c. 36.8
   d. None of the above

13. 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

14. 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)

15. 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

16. 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

17. The original IEEE 802 MAC address comes from_____
    a. MAC address
    b. IP address
    c. Ethernet address
    d. Http

18. Which protocol(s) resolve the collision during the contention period?
    a. Bit-map Protocol
    b. Binary Countdown
    c. Limited Contention Protocols
    d. All above mentioned

19. 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

20. 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

21. Contention Slots are not found in .....
    a. non-persistent CSMA
    b. CSMA/CD
    c. Bitmap
    d. None of these

22. A problem with Bitmap protocols is an overhead of ..... bit(s) per station.
    a. 0

b. 1
c. 2
d. 3

23. A medium access control technique for multiple access transmission media is
    a. Aloha
    b. Amplitude
    c. Attenuation
    d. Angle modulation

24. In Carrier Sense Multiple Access (CSMA), if the station senses the medium before trying to use it then the chance of collision can be
    a. Increased
    b. Reduced
    c. Highlighted
    d. Both b and c

25. In Carrier Sense Multiple Access (CSMA), the possibility of collision still exist because of
    a. Propagation delay
    b. sender-receiver delay
    c. Sense delay
    d. Transmit delay

26. FDMA stands for
    a. Frequency Division Multiple Access
    b. Fast Data Multiple Access
    c. Frequency Data Multiple Access
    d. Fast Division Multiple Access

27. The function that is used whenever the primary device is ready to receive is called
    a. poll function
    b. select function
    c. token-passing
    d. channelization

28. In CSMA/CA, An amount of time divided into slots is known as
    a. Contention Procedure
    b. Contention Window
    c. Contention Signals
    d. Contention Energy

29. The method in which one channel carries all transmissions simultaneously is
    a. TDMA
    b. CDMA
    c. FDMA
    d. CSMA

30. The original ALOHA protocol is called
    a. simple ALOHA
    b. pure ALOHA
    c. CSMA
    d. FDMA
31. Random access is also called the
    a. controlled access
    b. channelization
    c. authentication
    d. contention methods
32. CDMA stands for
    a. Carrier Division Multiple Access
    b. Code Data Multiple Access
    c. Code Division Multiple Access
    d. Carrier Data Multiple Access
33. The p-persistent method is used if the time slots with a slot duration equal to or greater than the maximum of
    a. Collision Time
    b. Sense Time
    c. Propagation Time
    d. Navigation Time
34. The collision may result in
    a. Save Data
    b. Retrieve Data
    c. Destroyed Data
    d. Encrypt Data
35. If the station has been authorized by other stations then a station can
    a. send data
    b. receive data
    c. acknowledge data
    d. wait
36. When a station needs to make a reservation before sending data then it is called the
    a. channelization
    b. token passing method
    c. polling method
    d. reservation method
37. In collision free protocol channel efficiency is given by-
    a. d/(d + log2(N))
    b. d*(d + log2(N))
    c. log2(N)

d. (d + log2(N))

38. The first collision free protocol is _____
    a. Binary countdown
    b. Basic bitmap
    c. Reservation protocol
    d. SAP
39. Frequency division multiple access (FDMA) assigns _____ channels to _____ users.
    a. Individual, individual
    b. Many, individual
    c. Individual, many
    d. Many, many
40. The FDMA channel carries ____ phone circuit at a time.
    a. Ten
    b. Two
    c. One
    d. Several
41. Cable television is an example of
    a. TDMA
    b. FDMA
    c. CDMA
    d. SDMA
42. TDMA allows the user to have
    a. Use of same frequency channel for same time slot
    b. Use of same frequency channel for different time slot
    c. Use of same time slot for different frequency channel
    d. Use of different time slot for different frequency channels
43. Global Positioning System uses
    a. CDMA
    b. TDMA
    c. SDMA
    d. FDMA
44. Frequency planning is very essential in
    a. FDMA
    b. TDMA
    c. FDMA & TDMA
    d. None of the mentioned
45. In Code Division Multiple Access, the orthogonal sequence is unique for each
    a. channel
    b. token
    c. link

d. station

46. In Frequency Division Multiple Access (FDMA), each band is reserved for a specific
    a. Signal
    b. Station
    c. Bandwidth
    d. Data
47. In Code Division Multiple Access (CDMA), the sequence of the code is called
    a. chips
    b. sets
    c. encoding
    d. decoding
48. TDMA stands for
    a. Timedivision multiple access
    b. Token division multiple access
    c. Time divide multiple access
    d. Token divide multiple access
49. Which protocol combines the advantages of collision based protocols and collision free protocols?
    a. Limited Contention protocols
    b. Reservation protocols
    c. Binary Countdown protocol
    d. None of above mentioned
50. The vulnerable time for CSMA is the _____propagation time.
    a. the same as
    b. two times
    c. three times
    d. none of the above

Unit 4 The Network Layer

1. Which layer provides data routing paths for network communications?
   a) Data Link Layer
   b) Network Layer
   c) Transport Layer
   d) Session Layer
2. Which of the following routing algorithms can be used for network layer design?
   a) shortest path algorithm
   b) distance vector routing
   c) link state routing
   d) all of the mentioned
3. The network layer protocol for internet is _____
   a) ethernet
   b) internet protocol
   c) hypertext transfer protocol
   d) file transfer protocol
4. 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
5. _____ deals with the issues of creating and maintaining routing tables.
   a) Forwarding
   b) Routing
   c) Directing
   d) None of above
6. A _____ routing table contains information entered manually.
   a) static
   b) dynamic
   c) hierarchical
   d) none of the above
7. The routing processor of a router performs the _____ layer functions of the router
   a) physical
   b) data link
   c) network
   d) transport

8. Routing between autonomous systems is referred to as _____
a) interdomain routing

b) intradomain routing
c) both a and b
d) none of the above

9. 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

10. 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

11. 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

12. In _____, the router forwards the received packet through only one of its interfaces.
a) unicasting
b) multicasting
c) broadcasting
d) none of the above

13. Sending a packet to all destinations simultaneously is called
a) Forwarding
b) broadcasting
c) Backwarding
d) none of the above

14. The Identifier that is used for data transfer in virtual circuit network is called _____
a) Global address
b) Virtual circuit identifier
c) Network identifier
d) IP identifier

15. Virtual Circuits is _____.
a) connection-oriented
b) connectionless
c) Both a) & b)
d) None of above

16. Datagram Networks is _____.
a) connection-oriented
b) connectionless
c) Both a) & b)

d) None of above

17. In_____, it is sure the all the packets will definitely reach to the Destination. No packet will discard due to unavailability of resources.
    a) Virtual Circuit Switching
    b) Datagram Packet Switching
    c) Both a) and b)
    d) None of above
18. In _____ all packets are free to go to any path on any intermediate router which is decided on the go by dynamically changing routing tables on routers.
    a) Virtual Circuit Switching
    b) Datagram Packet Switching
    c) Both a) and b)
    d) None of above
19. _____ is used by the ATM (Asynchronous Transfer Mode) Network.
    a) Virtual Circuit Switching
    b) Datagram Packet Switching
    c) Both a) and b)
    d) None of above
20. A message from device A consists of packet X and packet Y. In the datagram approach to packet switching, packet Y's path _____ packet X's.
    a) is the same as
    b) is dependent on
    c) is independent of
    d) is always different from
21. A local telephone network is an example of a _____ network.
    a) Packet switched
    b) Circuit switched
    c) Bit switched
    d) Line switched
22. In _____ systems, resources are allocated on demand.
    a) packet switching
    b) circuit switching
    c) line switching
    d) frequency switching
23. OSPF is also called as _____
    a) Link state protocol
    b) Error-correction protocol
    c) Routing information protocol
    d) Border gateway protocol
24. Give full form of OSPF.
    a) Open Shortest Path First
    b) Open Simple Path First
    c) Open Single Path First

d) Open Source Path First

25. In OSPF header, which field is used to detect errors in the packet?
    a) Type
    b) Area ID
    c) Authentication type
    d) Checksum
26. Which of the following is not a type of OSPF packet?
    a) Hello
    b) Link-state request
    c) Link-state response
    d) Link-state ACK
27. The …… protocol allows the administrator to assign a cost, called the metric, to each route.
    A. OSPF
    B. RIP
    C. BGP
    D. BBGP
28. If there is only one routing sequence for each source destination pair, the scheme is known as …..
    A. static routing
    B. fixed alternative routing
    C. standard routing
    D. dynamic routing
29. In ……. routing the least cost route between any two nodes is the minimum distance.
    A. path vector
    B. distance vector
    C. link state
    D. switching
30. A subset of a network that includes all the routers but contains no loops is called
    a) spanning tree
    b) spider structure
    c) spider tree
    d) none of the mentioned
31. Routing tables of a router keeps track of

    a.MAC Address Assignments

    b.Port Assignments to network devices

    c.Distribute IP address to network devices

    d.Routes to use for forwarding data to its destination

32. Routing processor searches in routing table is called

    a.switch fabric

    b.buffer

    c.table lookup

    d.rolling table

33. If you want to find the number of routers between a source and destination, the utility to be used is _____.

a.route

b.Ipconfig

c.Ifconfig

d.Traceroute

34. Count-to-Infinity problem occurs in .....

a.distance vector routing

b.short path first

c.link state routing

d.hierarchical routing

35. In distance vector routing algorithm, each router maintains a separate routing table with the following entries.

a.preferred input line , estimated time

b.preferred input line, estimated distance

c.preferred output line, estimated time

d.preferred output line, router

36. In which routing method do all the routers have a common database?

a.Distance Vector

b.Link Vector

c.Shortest path

d.Link State

37. In distance vector routing algorithm, the routing tables are updated .....

a.by exchanging information with the neighbours

b.automatically

c.using the backup database

d.by the server

38. Distance vector routing algorithm is implemented in Internet as .....

a.OSPF

b.RIP

c.ARP

d.APR

39. To do multicast routing, each router computes a .....

a.Binary tree

b.AVL tree

c.Spanning tree

d.None of these

40. In Broadcast routing, if the router does not know anything all about spanning tree, ... method is preferred.

a.Reverse Path forwarding

b.Multidestination

c.Flooding

d.Spanning tree

41. In distributed applications, it is sometimes necessary to update all the databases concurrently, we use .....

a.Shortest path first

b.First come first serve

c.Forwarding

d.Flooding

42. If a datagram router goes down then .....

a.all packets will suffer

b.only those packets which are queued in the router at that time will suffer

c.only those packets which are not queued in the router at that time will suffer

d.no packets will suffer

43. Which of the following is the address of the router?

a.The default gateway

b.The TCP address

c.The subnet mask

d.The IP address

44. Give the full form of MANET.
    a) Mobile Ad hoc NETworks
    b) Mobile Available NETworks
    c) Mega Ad hoc NETworks
    d) Mega Available NETworks
45. What is the type of network in which the topology change from time to time?
    a.Wi-Fi
    b.Cell Network
    c.LAN
    d.MANET
46. The processes that keep track of all mobile hosts visiting the area is .....
    a.Home agent
    b.Mobile agent
    c.Foreign agent
    d.User agent
47. What is the routing algorithm used in MANETs?
    a.Shortest Path First
    b.Routing Information Protocol
    c.Distance Vector Protocol
    d.Ad hoc On -demand Distance Vector Protocol
48. In multicast communication, the relationship is
    a) One to one
    b) One to many
    c) Many to Many
    d) Many to One

49. 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

50. 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

Unit 5 The Transport Layer

1. TCP and UDP are called _____
   a. Application protocols
   b. Session protocols
   c. Transport protocols
   d. Network protocols

2. Transport layer is which layer in OSI model?
   a. Fourth layer
   b. Third layer
   c. Second layer
   d. Fifth layer

3. _____ does not provide reliable end to end communication.
   a. TCP
   b. UDP
   c. Both TCP and UDP
   d. Neither TCP nor UDP

4. Transport layer protocols deals with _____
   a. Application to application communication
   b. Process to process communication
   c. Node to node communication
   d. MAN to MAN communication

5.What are the functions of the transport layer?

   a. Multiplexing/ Demultiplexing
   b. Addressing
   c. Packetizing
   d. All of above

6. TPDU stands for _____

   a. Transport Protocol Data Unit
   b. Transfer Protocol Data User
   c. Transfer Protocol Data Unit
   d. Transport Protocol Data User

7. Which of the following is a not transport layer primitive?
   a. SEND
   b. RECEIVE
   c. CONNECT
   d. RECONNECT

8. What are the elements of transport protocol?
    a. Addressing
    b. Establishing a connection
    c. Releasing a connection
    d. All of above
9. Size of TCP segment header ranges between _____
    a.16 and 32 bytes
    b. 16 and 32 bits
    c. 20 and 60 bytes
    d. 20 and 60 bits
10. Which of the following is false with respect to TCP?
    a. Connection-oriented
    b. Process-to-process
    c. Transport layer protocol
    d. Unreliable
11. The receiver of the data controls the amount of data that are to be sent by the sender is referred to as _____
    a. Flow control
    b. Error control
    c. Congestion control
    d. Error detection
12. Connection establishment in TCP is done by which mechanism?
    a. Flow control
    b. Three-Way Handshaking
    c. Forwarding
    d. Synchronization
13. The sizes of source and destination port address in TCP header are _____ respectively.
    a. 16-bits and 32-bits
    b. 16-bits and 16-bits
    c. 32-bits and 16-bits
    d. 32-bits and 32-bits
14. “Total length” field in UDP packet header is the length of _____
    a. Only UDP header
    b. Only data
    c. Only checksum
    d. UDP header plus data
15. The _____ field is used to detect errors over the entire user datagram.
    a. UDP header
    b. Checksum
    c. Source port
    d. Destination port
16. What is the purpose of the PSH flag in the TCP header?

a. Typically used to indicate end of message

b. Typically used to indicate beginning of message

c. Typically used to push the message

d. Typically used to indicate stop the message

17. In transport layer, message is divided into transmittable
    a. Segments
    b. Packets
    c. Frames
    d. None of above
18. Transport layer may be responsible for flow and error control, like the
    a. Datalink Layer
    b. Physical Layer
    c. Subnet Layer
    d. Application Layer
19. The source port address on the UDP user datagram header defines _____.
    a. The sending computer
    b. The receiving computer
    c. The process running on the sending computer
    d. None of the above
20. Connection establishment in TCP is called _____ handshaking.
    a. Two-way
    b. Four-way
    c. One-way
    d. None of above
21. The options field of the TCP header ranges from 0 to _____ bytes.
    a. 10
    b. 20
    c. 40
    d. None of above
22. UDP is an acronym for _____.
    a. User Delivery Protocol
    b. User Datagram Procedure
    c. User Datagram Protocol
    d. None of above
23. UDP uses _____ to handle outgoing user datagrams from multiple processes on one host.
    a. Flow control
    b. Multiplexing
    c. Demultiplexing
    d. None of above
24. Although there are several ways to achieve process-to-process communication, the most common is through the _____ paradigm.
    a. client-server
    b. client-client
    c. server-server

d. None of above

25. What is the meaning of connection oriented in TCP protocol that works at transport layer?
    a. Provides QoS
    b. Provides guarantee on data to be delivered
    c. Two way connection is supported
    d. 2,3
26. In UDP protocol, if data is lost in the middle what be its next action?
    a. It will retransmit until it reach its destination
    b. It will ignore and transmit the next packet
    c. It will stop sending packets
    d. None of the above
27. Which of the following protocol is mostly used in transport layer?

    a. TCP
    b. UDP
    c. Both a and b
    d. None of above

28. Transport layer aggregates data from different applications into a single stream before passing it to _____
    a. Network layer
    b. Datalink layer
    c. Application layer
    d. Physical layer

29. Which protocol is faster_____?
    a. UDP
    b. TCP
    c. Both are slow protocol
    d. both are fast
30. Which of the following is a not TCP flag?
    a. Synchronization (SYN)
    b. Acknowledgement (ACK)
    c. Finish (FIN)
    d. Start (ST)
31. Size of flag in TCP segment is_____
    a. 6 bits

b. 7 bits

c. 8 bits

d. 10bits

32. PDU at transport layer is called as_____

    a. Segment
    b. Packet
    c. Frame
    d. Data
33. Which of following is(are) advantage of TCP?

a. It supports many routing-protocols.
b. It can be used to establish a connection between two computers.
c. TCP/IP model has highly scalable client-server architecture.
d. All of above

34. Which is not included in UDP header?
a. Source port
b. Destination port
c. Length
d. Data

35. Size of urgent pointer is _____.
a. 8 bits
b. 16 bits
c. 12 bits
d. 6 bits

36. Addition of dummy data to fill up unused space in the transmission unit and make it conform to the standard size is called as _____.
a. Padding
b. Synchronization
c. Acknowledgment
d. Flag

37. The protocol used for transferring files from one system to another is _____
a. Telnet
b. RARP
c. FTP
d. UDP

38. Connection oriented service is based on the
a. Telephone system
b. Mobile phone
c. Postal service
d. None of above

39. TCP is more reliable than UDP because
a. It provide checksum
b. It detects error and duplicates packets
c. It perform retransmission
d. All of above

40. What do you mean by primitive in transport layer?
a. Operation
b. Protocol
c. Topology
d. None of above

41. _____is process of dividing a long message into smaller size.
a. Packetizing
b. Addressing
c. Flow control
d. None of above

42. SCTP stands for _____

a. Stream Control Transmission Protocol
b. Stream Collision Transmission Protocol
c. Stream Control Transport Protocol
d. Stream Collision Transport Protocol

43. UDP used for
a. Multicasting
b. Real time application
c. Request and response communication
d. All of above

44. MSS stands for _____
a. Maximum Segment Size
b. Minimum Segment Size
c. Maximum Size Segment
d. Minimum Size Segment

45. What is meaning of LISTEN primitive
a. Block until some process tries to connect
b. Actively attempt to establish a connection
c. Block until a DATA packet arrives
d. None of above

46. DCCP stands for
a. Datagram Congestion Control Protocol
b. Datagram Control Congestion Protocol
c. Datagram Congestion Collision Protocol
d. Datagram Collision Congestion Protocol

47. Transport layer take services from _____layer.
a. Datalink
b. Network
c. Presentation
d. Seesion

48. Multiple transport connection to single network connectivity is called as
a. Multiplexing
b. Inverse multiplexing
c. Demultiplexing
d. None of above

49. NSAP stands for
a. Network Service Access Points
b. Network Server Access Points
c. Network Service Access Protocol
d. Network Server Access Protocol

50. TCP is used _____mode
a. Full duplex
b. Half duplex
c. Simplex
d. None of above

Unit 6 The Application Layer

1. What is the full form of DNS protocol?
   a) Domain Name System
   b) Domain Name Server
   c) Digital Name Server
   d) Digital Name System
2. DNS protocol map _____.
   a) IP address to Domain Name
   b) Domain Name to IP address
   c) Digital Name to IP address
   d) IP address to Digital Name
3. Which domain name is not a part of generic domain name?
   a) com
   b) edu
   c) org
   d) us
4. Domain names are _____ and the component names can be up to ____ characters long.
   a) Case sensitive, 64
   b) case insensitive, 64
   c) case sensitive, 63
   d) case insensitive, 63
5. In DNS, “org” domain name used for _____.
   a) non-profitorganizations
   b) profitorganizations
   c) Both a) and b)
   d) None of above
6. In DNS, “com” domain name used for _____.
   a) commercial
   b) education
   c) non-commercial
   d) None of above
7. Resource record of DNS have ____ tuple.
   a) 4
   b) 5
   c) 6
   d) 7
8. Give full form of E Mail.
   a) Electric Mail
   b) Electronic Mail

c) E-Commerce Mail
d) None of above

9. In E-Mail, _____ is the process of creating messages and answers.
    a. Reporting
    b. Displaying
    c. Composition
    d. Dispositio
10. In E-Mail, _____ is the process of telling the originator what happened to the message that is, whether it was delivered, rejected (or) lost.
    a. Displaying
    b. Composition
    c. Disposition
    d. Reporting
11. What is the use of bcc header used in message format of E-Mail?
    a) E-Mail address for blind carbon copy
    b) E-Mail address for blank carbon copy
    c) E-Mail address of secondary recipient
    d) E-Mail address of primary recipient
12. What is the full form of MIME protocol?
    a) Multipurpose Internet Mail Extensions
    b) Multiple Internet Mail Extensions
    c) Multipurpose Internet Message Extensions
    d) Multipurpose Image Message Extensions
13. MIME is used for _____.
    a) Messages in non-Latin alphabets (e.g., Hebrew and Russian).
    b) Messages in languages without alphabets (e.g., Chinese and Japanese).
    c) Messages not containing text at all (e.g., audio or images).
    d) All of above mentioned
14. What is the full form of SMTP protocol?
    a) Simple Mail Transfer Protocol
    b) Simple Message Transfer Protocol
    c) Single Mail Transfer Protocol
    d) Single Message Transfer Protocol
15. Application layer protocol defines _____
    a) types of messages exchanged
    b) message format, syntax and semantics
    c) rules for when and how processes send and respond to messages
    d) all of the mentioned

16. File transfer, access, and management are handled by the _____ layer.
    a) Transport
    b) Session
    c) Application
    d) Presentation
17. When displaying a web page, the application layer uses the _____
    a) HTTP protocol
    b) FTP protocol
    c) SMTP protocol
    d) TCP protocol
18. Which one of the following protocol delivers/stores mail to receiver server?
    a) simple mail transfer protocol
    b) post office protocol
    c) internet mail access protocol
    d) hypertext transfer protocol
19. Which one of the following is not correct?
    a) Application layer protocols are used by both source and destination devices during a communication session
    b) HTTP is a session layer protocol
    c) TCP is an application layer protocol
    d) All of the mentioned
20. Which is not a application layer protocol?
    a) HTTP
    b) SMTP
    c) FTP
    d) TCP
21. Application layer offers _____ service.
    a) End to end
    b) Process to process
    c) Both End to end and Process to process
    d) None of the mentioned
22. Electronic mail uses which Application layer protocol?
    a) SMTP
    b) HTTP
    c) FTP
    d) SIP
23. When the mail server sends mail to other mail servers it becomes _____
    a) SMTP server
    b) SMTP client
    c) Peer
    d) Master

24. The underlying Transport layer protocol used by SMTP is _____
    a) TCP
    b) UDP
    c) Either TCP or UDP
    d) IMAP
25. UDP port used by DNS is _____
    a) 52
    b) 53
    c) 54
    d) 51
26. SMTP uses which of the following port?
    a) 22
    b) 23
    c) 21
    d) 25
27. In a _____name space, each name is made of several parts.
    a) flat
    b) hierarchical
    c) organized
    d) none of above
28. A full domain name is a sequence of labels separated by _____.
    a) semicolon
    b) dots
    c) colon
    d) none of above
29. A _____ is a subtree of the domain name space.
    a) label
    b) name
    c) domain
    d) none of above
30. The packet of information at the application layer is called:
    A. Packet
    B. Message
    C. Segment
    D. Frame
31. E-mail is:
    A. Loss-tolerant application
    B. Bandwidth-sensitive application
    C. Elastic application

D. None of the mentioned

32. In MIME header field, …… describes how the object within the body was encoded in order that it be included in the message using a mail-safe form.
    A. content-type
    B. content-transfer-encoding
    C. content-description
    D. content-id
33. In MIME header field, …… describes how the object within the body is to be interpreted.
    A. content-type
    B. content-transfer-encoding
    C. content-description
    D. content-id
34. The …… is the interface through which a user can read and send mail.
    A. Mail user agent (MUA)
    B. Mail transfer agent (MTA)
    C. Mail delivery agent (MDA)
    D. Mail send agent (MSA)
35. Identify the odd one out of the following terms stated below:
    a) Hypertext
    b) FTP
    c) Segment
    d) Internet
36. Which of the following protocol sends electronic mail to receiver's end?
    a) FTP
    b) SMTP
    c) POP3
    d) None of above
37. DNS can obtain the ..... of host if its domain name is known and vice versa.
    A) Station address B) IP address C) Port address D) Checksum
38. Which of the following of the TCP/IP protocols is the used for transferring files from one machine to another?
    A) FTP
    B) SMTP
    C) SNMP
    D) DNS
39. Give the full form of POP3 protocol.
    a) Post Office Protocol Version 3
    b) Post Open Protocol Version 3
    c) Peer Office Protocol Version 3
    d) Peer Open Protocol Version 3

40. What is the use of cc header used in message format of E-Mail?
    a) E-Mail address for blind carbon copy
    b) E-Mail address for blank carbon copy
    c) E-Mail address of secondary recipient

d) E-Mail address of primary recipient

41. Which of the header field is not present in MIME header?
    A. content-type
    B. content
    C. content-description
    D. content-id
42. Post Office Protocol, version 3 (POP3), has two modes, Delete Mode and
    a) Outbox Mode
    b) Keep Mode
    c) Idle Mode
    d) Function Mode
43. Post Office Protocol, version 3 (POP3) is simple and limited in
    a) Usage
    b) Availability
    c) Data Type
    d) Functionality
44. At the beginning of the Internet era, the messages sent by electronic mail were short and consisted of
    a) Image Only
    b) Text Only
    c) String Only
    d) Number Only
45. _____ layer contains network virtual terminal.
    a) Application
    b) Network
    c) Transport
    d) Data link
46. Once the connection has been established, the POP3 protocol goes through three states in sequence:
    a) 1) Authorization 2) Transactions 3) Update
    b) 1) Update 2) Authorization 3) Transactions
    c) 1) Update 2) Transactions 3) Authorization
    d) 1) Authorization 2) Update 3) Transactions
47. Give the full form of IAMP
    a) Image Message Access Protocol
    b) Image Mail Access Protocol
    c) Internet Mail Access Protocol
    d) Internet Message Access Protocol
48. _____ allows you to connect and login to a remote computer
    a) Telnet
    b) FTP
    c) HTTP
    d) SMTP

49. TCP port used by Telnet is _____
    a) 20

b) 21
c) 22
d) 23

50. TCP port used by FTP is _____
    a) 24
    b) 21
    c) 22
    d) 23