COMPUTER NETWORKS

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UNIT - 1

State whether the following statements are true or false:

Fill in the blanks:

1. The main goal of networking is .....

2. In a distributed system, the existence of multiple autonomous computers is..... to the user.

3. The computers on a ..... may be linked through cables, telephone lines, radio waves, satellites or infrared light beams.

4. 4. You can create files and store them in one computer, then ..... those files from the other computer(s) connected to it.

5. A ..... system is a special case of a network; one whose software gives it a high degree of cohesiveness and transparency.

State whether the following is true or false.

6. A topology, which is a pattern of interconnections among nodes, influences a network's cost and performance.

7. There are Five primary types of network topologies which refer to the physical and logical layout of the Network cabling.

8. Bus is the simplest and the oldest and all the telephone switches are based on this. 9. Bus consists of a single cable, called a Backbone that connects all workstations on the network using a single line.

10. The purpose of the terminators at either end of the network is to stop the signal being reflected back.

Answers: Self Assessment

1. Resource sharing 2. transparent

3. network 4. access

5. distributed 6. True

7. False 8. False

9. True 10. True

UNIT - 2

Fill in the blanks

1. .....refers to whether the connections between the nodes on your network are working properly.

2. .....measures your network's actual data transmission rate, which can vary wildly through different areas of your network.

3. .....is the delay that happens between a node or device requesting data and when that data is finished being delivered.

4. .....examines how many data packets are dropped during data transmissions on your network.

5. .....rate lets your enterprise know how often packets are being dropped, which is an indication of congestion on your network.

State whether the following is true or false.

6. Bandwidth is the minimum data transmission rate possible on a network. 7. De facto standards are the standards that are followed with a formal plan or approval by any organization.

8. De jure standards are the standards which have been adopted through legislation by any officially recognized standards organization.

9. The World Wide Web Consortium (W3C) is the main international standards organization for World Wide Web which was founded and headed by Tim Berners-Lee.

10. SNR measures the quality of a system that indicates the strength of the signal wrt the noise power in the system.

Answers for Self Assessment

1. Connectivity 2. Throughput 3. Latency 4. Packet loss 5. Retransmission

6. False 7. False 8. True 9. True 10. True

UNIT - 3

State whether the following statements are true or false:

1. The entities comprising the corresponding layers on different computers are called clients.

2. The International Organization for Standardization (ISO) took the initiative in setting upOSI.

3. Data communication process allocates memory resources, commonly known as communications buffers for the sake of transmission and reception of data.

4. The information exchanged between two computers is physically carried by means of chemical signals assuming certain coding methods.

5. OSI reference model divides the required functions of the network architecture into fivelayers and defines the function of each layer.

6. The TCP/IP ..... layer corresponds to the network layer of the OSI reference model in functionality.

7. TCP is a ..... protocol and UDP is an unreliable connectionless protocol.

8. OSI reference model divides the required functions of the ..... into several layers and defines the function of each layer.

9. ..... are entities in the same layer on different computers.

10. ..... is the point from where services can be accessed?

11. What layer in the TCP/IP stack is equivalent to the Transport layer of the OSI model? A. Application

B. Host to host

C. Internet

D. Network Access

12. Which of the following protocols uses both TCP and UDP?

A. FTP

B. SMTP

C. Telnet

D. DNS

13. TCP/IP layer is equivalent to combined Session, Presentation and _____ A. Network layer

B. Application layer

C. Transport layer

D. Physical layer

14. How many levels of addressing is provided in TCP/IP protocol?

A. One

B. Two

C. Three

D. Four

15. A device operating at network layer is called _____

A. Router

B. Equalizer

C. Bridge

D. Repeater

Answer for Self Assessment

1. False 2. True 3. True 4. False 5. False

6. internet 7. Reliable connection oriented

8. Network architecture

9. Peer entities

10. Service access points

11. B 12. D 13. B 14. D 15. A

UNIT - 4

Fill in the blanks:

1. ..... can be broadly categorized into guided and unguided media.

2. The actual range of frequencies supporting a given communication is known as a .....

3. In general, the higher the ....., the more will be the data transmission rate or throughput.

4. ..... refers to the length of time required for a signal to travel from transmitter to receiver across a transmission system.

5. Bandwidth may be defined as the range of .....assigned to a channel.

State whether the following statements are true or false:

6. Twisted pair (both unshielded and shielded), coaxial and fiber optic cable systems fall into ;guided transmission media category.

7. The twisting decreases the electrical noise immunity, and reduces the error rate of the data transmission.

8. A UTP cable contains from 2 to 4200 twisted pairs.

9. Coaxial cable is inherently an insecure transmission medium.

10. Local Area Networks can operate over coaxial cable to the 10BASE5, 10BASE2 and 10BASET specifications

Answers: Self Assessment

1. Transmission media 2. Pass band

3. Bandwidth 4. Propagation delay

5. Frequencies 6. True

7. False 8. True

9. False 10. True

UNIT - 5

Fill in the blanks:

1. The data link layer receives a raw bit stream from the ..... layer that may not be error free.

2. Some of th

e examples of ..... check are audio storage and playback devices such as audio CD's.

3. CRC codes are also called as ..... codes.

4. ..... consists of Even Parity and Odd Parity Method. State whether the following statements are true or false:

5. Shannon's theorem is an important theorem in forward error correction.

6. The actual maximum code rate allowed depends on the error-correcting code used.

7. The code rate is defined as the fraction k/n of k source symbols and n encoded symbols.

8. Block codes are processed on a bit-by-bit basis.

9. Early examples of block codes are repetition codes, hamming codes and multidimensional parity-check codes.

10. Turbo codes and low-density parity-check codes (ldpc) are relatively new constructions that can provide almost optimal efficiency.

Select the correct answer for the following questions

11. Which of the following is not a function performed by the Data Link Layer?

a) Reliable data transfer service between two peer network layers

b) It provides a logical communication between application processes running on different hosts.

c) Flow Control mechanism which regulates the flow of frames to avoid data congestion

d) It encapsulates the received packets into Frames.

12. Which of the following is true regarding Error Control?

a) Sometimes signals may have encountered problem in transition and the bits are flipped.

b) It involves ensuring both machine to exchange data on same speed.

c) The errors are detected and attempted to recover actual data bits.

d) It provides error reporting mechanism to the sender.

13. Which of the following is true regarding the Logical Link Control (LLC)?

a) It explains how to share the link.

b) It deals with the design and procedures for communication b/w nodes.

c) It provides mechanism such as CSMA/CD to equip capability of accessing shared media among multiple Systems.

d) All the mentioned choices

14. The function that the Logical link control performs includes_____.

a) Framing

b) Flow Control

c) Error control

d) All the given choices

15. Which of the following is not true regarding Multiple-Access?

a) When host on the shared link tries to transfer the data, it has a high probability of collision.

b) Data-link layer provides CSMA/CD to equip accessing a shared media among multiple Systems.

c) It provides error reporting mechanism to the sender.

d) None of the given choices

Answers: Self Assessment

1. physical 2. Parity 3. Polynomial 4. Parity check 5. True 6. True 7. True 8. False 9. True 10. True 11. b 12. b 13. b 14. d 15. c

UNIT - 6

Fill in the blanks:

1. ..... describes the techniques to access a shared communication channel and reliable transmission of data frame in computer communication environment.

2. ..... does not include any connection setup or release and does not deal with frame recovery due to channel noise.

3. ..... refers to a reliable transfer of bit streams to the network layer for which the data link layer breaks the bit stream into frames.

4. ..... controls mismatch between the source and destination hosts data sending and receiving speed and therefore dropping of packets at the receiver end.

5. In stop and wait protocol, the acknowledgement frame has ..... bits that the destination node sends back to the source machine.

6. Positive Acknowledgement with Retransmission Protocol (PAR) uses ..... to determine if any frames is lost or damaged.

7. The Go Back N protocol overcomes the problem of PAR by enabling the source machine to have more than ..... at a time by using buffers.

Multiple Choice Questions:

8. Stop-and-wait ARQ is a _____technique.

a) line discipline

b)Error control

c) flow control

d)Session management

9. Which of the following is true regarding the Send Sliding Window?

a) Send window is an imaginary box covering the sequence numbers of the data frames which can be in transit.

b) In each window position, some of these sequence numbers define the frames that have been sent; others define those that can be sent.

c) The maximum size of the window is 2m.

d) Window size may be fixed and set to the maximum value, but some protocols may have a variable window size.

10. The sender which sends one frame and then waits for an acknowledgement before process is known as_____?

a) Stop and Wait ARQ.

b) Simplest protocol

c) Selective Repeat ARQ

d) Go-back-N ARQ

11. In the Stop-and-Wait ARQ, if the acknowledgement frame gets lost, then not having received an ACK, it assumes that_____

a) Data frame is lost or damaged

b) ACK is lost

c) Both Data frame and ACK are lost or damaged

d) None of the given choices

12. In Stop and Wait Automatic Repeat Request, the arrival of the duplicate message can be identified with _____

a) Adding a sequence number in the header of the message.

b) Adding a sequence number in the trailer of the message.

c) Checking the ACK of the message

d) None of the given choices

13. In Stop and Wait Automatic Repeat Request, a NAK denotes that the _____

a) data packet is found to be corrupt.

b) data packet has arrived out of sequence.

c) data packet has arrived late

d) None of the given choices

14. The Stop and Wait Automatic Repeat Request, is the simplest mechanism for_____

a) error control

b) flow control

c) error control and flow control

d) None of the given choices

15. Noiseless channel is an ideal channel in which no frames are _____

a) lost

b) duplicated

c) corrupted

d) lost, duplicated, or corrupted.

Answers: Self Assessment

1. Data link layer 2. Unacknowledged connectionless service 3. Framing 4. Rate of data transmission

5. nil 6. a sequence number

7. one outstanding frame 8. B

9. C 10. A

11. A 12. A

13. A 13. C

15. D

UNIT - 7

Fill in the blanks:

1. In _____, the stations share the bandwidth of the channel in time.

a) FDMA

b) CDMA

c) TDMA

d) None of the given choices

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

a) CSMA

b) MA

c) CDMA

d) FDMA

3. In _____the available bandwidth is divided into frequency bands.

a) FDMA

b) TDMA

c) CDMA

d) None of the given choices.

channelization

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

Select the correct answer for the following questions

5. Which of the following is not a Random-Access Protocol?

a) Aloha b) CDMA c) CSMA/CD d) CSMA/CA

6. Which of the following is not a Controlled-Access Protocol?

a) Reservation b) Token Passing c) Pooling d) TDMA

7. Which of the following is not a channelization protocol?

a) CDMA b) CSMA c) FDMA d) TDMA

8. Which of the following statement is true regarding the Random-Access protocols of the Data Link Layer?

a) Here no station is superior to another station and none is assigned the control over another.

b) No station permits, or does not permit, another station to send.

c) At each instance, a station that has data to send uses a procedure defined by the protocol to make a decision on whether or not to send.

d) All of the given choices

9. In Pure ALOHA, some of the frames collide because_____

a) Each frame has its individual channel and limited resources

b) Multiple channels are available for the frames

c) Multiple frames are in contention for the shared channel.

d) None of the given choices

10. Which of the following is true?

a) CSMA can reduce the possibility of collision and eliminates it.

b) The possibility of collision does not exist because of propagation delay.

c) A station may sense the medium and find it idle, only because the first bit sent by another station has not yet been received.

d) None of the given choices

11. Different CSMA methods that determine_____.

a) What a station should do when the medium is idle?

b) What a station should do when the medium is busy?

c) Both given choices

d) None of the given choices

12. Which of the following relates of 1-persistent method?

a) After the station finds the line idle, it sends its frame immediately (with probability 1)

b) A station that has a frame to send senses the line. If the line is not idle, it waits a random amount of time and then senses the line again.

c) A station that has a frame to send senses the line. If the line is idle, it sends immediately.

d) None of the given choices

13. CSMA (Carrier Sense Multiple Access) is_____.

a) a method of determining which device has access to the transmission medium at any time

b) a method access control technique for multiple-access transmission media.

c) a very common bit-oriented data link protocol issued by ISO.

d) a network access standard for connecting stations to a circuit-switched network.

14. What are the advantages of Carrier Sensing?

a) Sensing a carrier can avoid simultaneous transmissions by other nodes

b) It will help in reducing retransmission of data frames due to collisions with other station data frames

c) It improves performance of the network as the individual nodes sense for a carrier present in the transmission medium before requesting access to it.

d) All the given choices

15. 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 given choices

UNIT - 8

Fill in the blanks:

1. The IP addresses 10000001 00001011 00001011 11101111 in binary notation is equivalent to _____ dotted-decimal notation.

2. The IP addresses 11000001 10000011 00011011 11111111 in binary notation is equivalent to _____ dotted-decimal notation.

3. The IP addresses 11100111 11011011 10001011 01101111in binary notation is equivalent to _____ dotted-decimal notation.

4. The IP addresses11111001 10011011 11111011 00001111 in binary notation is equivalent to _____ dotted-decimal notation.

5. The IP addresses 111.56.45.78 in the dotted-decimal notation is equivalent to _____ in binary notation.

6. The IP addresses 221.34.7.82 in the dotted-decimal notation is equivalent to _____ in binary notation.

7. The IP addresses 241.8.56.12 in the dotted-decimal notation is equivalent to _____ in binary notation.

8. The IP addresses 75.45.34.78 in the dotted-decimal notation is equivalent to _____ in binary notation.

Multiple Choice Questions:

9. Choose the address of class D

A. Unicast

B. Reserved

C. Multicast

D. None of the given choices

10. Select the wrong class.

A. CLASS A = 1 to 126

B. CLASS C = 192 to 220

C. CLASS B = 128 to 191

D. CLASS D = 224 to 239

11. Which of the following is true in context to ARP?

A. ARP is used to find the MAC (Media Access Control) address of a device from its IP address.

B. ARP is used when a device wants to communicate with another device on a Local Area Network or Ethernet.

C. At DLL we need to know the MAC address of the machine by sending an ARP request packet

D. All the given choices

12. Which of the following is a type of Address Resolution Protocol

A. Gratuitous ARP

B. Reverse ARP (RARP)

C. Inverse ARP

D. All the given choices

13. Which of the following is not true regarding Network Address Translation (NAT)?

A. NAT allows multiple devices to access the Internet through a single public address.

B. The translation of private IP address to a public IP address is required.

C. One or more local IP address is translated into one or more Global IP address and vice versa to provide Internet access to the local hosts.

D. It does not perform the translation of port numbers

14. Which of the following is considered to be the address before translation?

A. Inside Local

B. Inside Global

C. Outside Local

D. Outside Global

15. Which of the following is not an advantages of using NAT?

A. Translation introduces switching path delays.

B. Conserves legally registered addresses.

C. Increases flexibility when connecting to the Internet.

D. Reduces address overlap occurrence.

16. If Direct Broadcast address is 201.15.16.31, which of the following can be subnet mask?

A. 255.255.255.240

B. 255.255.255.248

C. 255.255.255.252

D. All the given choices

17. In class B if subnet mask is 255.192.0.0 Total Number of networks than can be joined is ___.

A. 32

B. 64

C. 16

D. None of the given choices

Answer for self Assessment:

1. 129.11.11.239 2. 193.131.27.255

3. 231.219.139.111 4. 249.155.251.15

5. 01101111001110000010110101001110 6. 11011101 00100010 00000111 01010010 7. 11110001000010000011100000001100 8. 01001011 00101101 00100010 01001110

9. C 10. B 11. D 12. D 13. D

UNIT - 9

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

A. Broadcast

B. Unicast

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

A. Multicast

B. Broadcast

3. Which of the following is not true regarding Network Layer Routing?

A. The software-based routers have limited functionality and limited scope.

B. A default route tells the router where to forward a packet if there is no route found for specific destination.

C. A Router cannot be configured to be preferred over others.

D. Routers can be dynamically learnt

4. Which of the following are the major protocols of unicast routing?

A: Distance Vector Routing

B: Link State Routing

C: Path-Vector Routing

A. A and B

B. A and C

C. B and C

D. A, B and C

5. Which of the following is not true regarding the Distance Vector Routing Protocol?

A. It requires that a router inform its neighbors of topology changes periodically.

B. It is also known as the old ARPANET routing algorithm

C. It is also known as the Bellman-Ford algorithm

D. Each router doesn't require to maintain a Distance Vector routing table

6. What is not true regarding the adaptive routing algorithms?

A. It makes the routing decisions based on the topology and network traffic.

B. It makes use of dynamic information to select routes.

C. The changes in routing decisions are never reflected in the topology as well as traffic of the network.

D. The main optimizing parameters related to this algorithm are hop count, distance and estimated transit time.

7. Which of the following is not a category of the adaptive routing algorithm?

A. Centralized algorithm

B. Isolation algorithm

C. Distributed algorithm

D. Flooding algorithm

8. The problem with the Flooding Non-Adaptive Routing Algorithm can be overcome with the help of_____

A. Hop Count

B. Sequence Number

C. Spanning Tree

D. All of these

9. Which of the following is not a drawback of the Broadcast routing technique?

A. Inefficiency

B. multicast

C. unrealistic assumptions

D. uncontrolled flooding

10. Following are the types of routing on MANET, except_____

A. Proactive Routing

B. Reactive Routing

C. Hybrid Routing

D. Hyper Active Routing

11. Which of the following is not a routing metric?

A. Signal stability

B. Choice of most followed route

C. Association stability

D. Route Length

12. Which of the following is true regarding Flat Routing Protocol?

A. It is implemented by routers in which all routers are each other's peers.

B. It determines a route to a destination only when request for transmission to that node arrives.

C. Geographical information about a node is collected by another node using GPS mechanism.

D. The communication overhead is reduced but the delay is increased.

13. Which of the following is true regarding the wireless routing protocols?

A. It was designed by Murthy and Garcia-Luna.

B. Here the route is chosen by selecting a neighbor node that would minimize the path cost.

C. It uses the properties of the distributed Bellman-Ford algorithm.

D. All the given options

14. In the Shortest Path Routing Algorithm, the cost of the link from one node to the other maybe a function of?

A. Distance

B. Bandwidth

C. Average traffic between different nodes

D. All the given choices

15. Which of the following is not true regarding Dijkstra's algorithm?

A. It works on the Directed Weighted Graph where each edge can have only positive weights.

B. It can have weights as in case of Bellman Ford Algorithm

C. It is a shortest path routing algorithm

D. All the given choices

Answer for Self Assessment

1. A 2. A 3. C 4. D 5. D 6. C 7. D 8. D 9. D 10. D 11. B 12. A 13. D 14. D 15. B

UNIT - 10

Select the correct answer for the following questions

1. The main aspects related to reliable delivery in the transport layer are.

A: Error control

B: Sequence control

C: Loss control

D: Duplication control

A. A and C

B. A and D

C. B and C.

D. A, B, C and D.

2. Which of the following is true regarding upward multiplexing?

A. It means multiple transport layer connections use different network connections.

B. For cost-effectiveness, the transport layer sends several transmissions bound for the same destination along the same path

C. It allows the transport layer to split a connection among several paths to improve the throughput.

D. This type of multiplexing is used when networks have a low or slow capacity.

3. Which of the following is not true regarding the Addressing function of the Transport Layer?

A. The transport layer provides the user address which is specified as a station or port.

B. Each station has only one transport entity.

C. The transport layer protocols need not know which upper-layer protocols are

communicating.

D. The port variable represents a particular TS user of a specified station known as a

4. Which of the following is not true regarding the Addressing function of the Transport Layer?

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C. The transport layer protocols need not know which upper-layer protocols are

communicating.

D. The port variable represents a particular TS user of a specified station known as a

5. Which of the following is not true regarding flow control feature of the Transport Layer?

A. The underlying rule of flow control is to maintain a synergy between a fast process and a slow process.

B. It uses the sliding window protocol that makes the data transmission more efficient

C. The transport layer controls the flow of data so that the receiver does not become overwhelmed.

D. Sliding window protocol is frame oriented rather than byte oriented.

6. Which of the following is true regarding connection-oriented service?

A. Connection-oriented service is related to the telephone system.

B. It includes the connection establishment and connection termination.

C. Handshake method is used to establish the connection between sender and receiver.

D. All the given choices

7. Which of the following is not a benefit of the connection-oriented service?

A. It provides reliability in the service.

B. There are fewer chances of packet loss

C. It is preferred by bursty communication.

D. It provides a long and steady conversation.

8. Which of the following is not true regarding connectionless service?

A. In connection-less service, packets follow the same route.

B. Connection-less service requires a bandwidth of low range.

C. Connection-less service is related to the postal system.

D. In connection-less service, congestion is possible.

9. Which of the following is not true?

A. In connection-oriented service we can implement flow control, error control & congestion control.

B. In connectionless service, each packet of the same message should follow the same route to get delivered to the destination.

C. Connectionless service considers each packet of the same message as a different and independent entity.

D. In connectionless service, packets are routed based on the destination address on the packet.

10. Which of the following are transport layer protocols used in networking?

A. TCP and FTP

B. UDP and HTTP

C. TCP and UDP

D. HTTP and FTP

11. Transmission control protocol?

A. Is a connection-oriented protocol

B. Uses a three-way handshake to establish a connection

C. Receives data from application as a single stream

D. All the given choices

12. Which of the following is false with respect to UDP?

A. Connection-oriented

B. Unreliable

C. Transport layer protocol

D. Low overhead

13. In context of the TCP segment format, the various fields shared in FIN are

A. Window Size

B. Checksum

C. Options and padding

D. All the given choices

14. With respect to the TCP Segment Format, what is the Window size?

A. It is a 8-bit field which defines the size of the window

B. It is a 16-bit field which defines the size of the window

C. It is a 12-bit field which defines the size of the window

D. It is a 32-bit field which defines the size of the window

15. Which of the following is true regarding the TCP Segment format?

A. It transmits the data directly to the destination computer without verifying whether the receiver is ready to receive or not.

B. It is a connectionless protocol

C. It establishes a virtual circuit before transmitting the data.

D. It has a header size of 8 bytes

Answer for self Assessment

1 D 2 B 3 C 4 C 5 D 6 D 7 C 8 A 9 B 10 C 11 D 12 A 13 D 14 B 15 C

UNIT - 11

1. Congestion in a network or internetwork occurs because routers and switches have _____.

A. Tables

B. Queues

C. Cross points

D. None of the given choices

2. In a network, when the load is much less than the capacity of the network, the delay is_____

A. at a maximum

B. at a minimum

C. constant

D. none of the given choices

3. In a network, when the load reaches the network capacity, the delay _____

A. increases sharply

B. decreases sharply

C. remains constant

D. cannot be predicted

4. In a network, when the load is below the capacity of the network, the throughput_____

A. increases sharply

B. increases proportionally with the load

C. declines sharply.

D. declines proportionately with the load.

5. In _____ congestion control, mechanisms are used to alleviate congestion after it happens

A. Open-loop

B. Closed-loop

C. Both open-loop and closed-loop

D. neither open-loop nor closed-loop

6. The technique of _____ refers to a congestion control mechanism in which a congested node stops receiving data from the immediate upstream node or nodes

A. backpressure

B. choke packet

C. implicit signaling

D. explicit signaling

7. A _____ is a packet sent by a node to the source to inform it of congestion.

A. backpressure

B. implicit signaling

C. choke packet

D. explicit signaling

8. In _____, there is no communication between the congested node or nodes and the source. The source guesses that there is congestion somewhere in the network from other symptoms

A. backpressure

B. implicit signaling

C. choke packet

D. explicit signaling

9. In the _____ method, the signal is included in the packets that carry data.

A. backpressure

B. implicit signaling

C. choke packet

D. explicit signaling

10. Congestion is the reduced quality of service that occurs when a network node or link is carrying_____

A. more data than it can handle

B. less data than it can handle

C. data to the server

D. All the given choices

11. Which of the following is an effect of congestion?

A. queuing delay

B. packet loss

C. blocking of new connections

D. All the given choices

12. In _____, we try to create an appropriate environment for the traffic.

A. congestion control

B. quality of service

C. both the given choices

D. None of these

13. Which of the following is not a requirement of Quality of Service?

A. Jitter

B. Throughput

C. Error Rate

D. Stateless solution

14. Which of the following is not true regarding stateless solutions?

A. In stateless solutions Routers maintain no fine-grained state about traffic

B. It is scalable

C. It is robust.

D. It has strong service

15. Which of the following is not true regarding Leaky Bucket Algorithm?

A. It shapes burst traffic into fixed-rate traffic by averaging the data rate.

B. It enforces output pattern at the average rate, no matter how bursty the traffic is. C. It never drops the packets even if the bucket is full.

D. It is not perfect when dealing with bursty traffic

State whether the following is true or false:

16. The quality of service (QoS) of computer networks is evaluated with respect to the traffic priority.

17. Bandwidth has no role to plays in providing a good quality of service.

18. The best effort traffic model handles all Internet requests with equal priority and serves them with the first come first serve strategy.

19. The congestion management tool may include priority queuing, custom queuing, weighted air queuing, etc.

20. The link fragmentation and interleave process segment small packet into large packets interleaving the voice packet.

21. Shaping is used to prevent the overflow problem in buffers by limiting the full bandwidth potential of the packets of applications.

Answers: Self-Assessment

1. B 2. B 3. A 4. B 5. B 6. A 7. C 8. B 9. D 10. A 11. D 12. B

13. D 14. D 15. C 16. True 17. False 18. True 19. True 20. False 21. True

UNIT - 12

Fill in the blanks

1. .....refers to whether the connections between the nodes on your network are working properly.

2. .....measures your network's actual data transmission rate, which can vary wildly through different areas of your network.

3. .....is the delay that happens between a node or device requesting data and when that data is finished being delivered.

4. .....examines how many data packets are dropped during data transmissions on your network.

5. .....rate lets your enterprise know how often packets are being dropped, which is an indication of congestion on your network.

State whether the following is true or false.

6. Bandwidth is the minimum data transmission rate possible on a network. 7. De facto standards are the standards that are followed with a formal plan or approval by any organization.

8. De jure standards are the standards which have been adopted through legislation by any officially recognized standards organization.

9. The World Wide Web Consortium (W3C) is the main international standards organization for World Wide Web which was founded and headed by Tim Berners-Lee.

10. SNR measures the quality of a system that indicates the strength of the signal wrt the noise power in the system.

Answers: Self Assessment

1. Connectivity 2. Throughput

3.Latency 4.Packet loss

5. Retransmission 6. False

7. False 8. True

9. True 10.True

UNIT - 13

Multiple Choice Questions

1) Which of the following is not true regarding Internet?

a) Internet uses TCP/IP protocol suite to connect computer users worldwide.

b) Internet was first connected in 1969

c) It was developed by ICANN (Internet Corporation for Assigned Names and Numbers) located in the USA.

d) The internet works with the help of clients and servers

2) When you turn on your computer and type a domain name in the browser search bar,_____?

a)It creates a virtual connection between the server and the computer.

b)Your browser sends a request to the HTTP server and opens the webpage for you.

c) The request is forwarded to the Internet Service Provider who opens the requested page on the computer.

d)Your browser sends a request to the DNS server to get the corresponding IP address, and then forwards the request to the respective server.

3) Which of the following is not related to the Web?

a) It is a model for sharing information

b) It is accessed by the Web Browser.

c) It makes use of the HTTP protocol

d)It is also known as Network of Networks.

4) Which of the following is not true regarding URI?

a) URI stands for 'Uniform Resource Identifier'.

b) A URI can be a name, locator, or both for an online resource.

c) URIs are a subset of URLs.

d) A URL (a subset of URI) is human-readable text that was designed to replace the IP addresses that computers use to communicate with servers.

5) What is not true regarding HTTP?

a) HTTP stands for Hyper Text Transfer Protocol.

b) It is invented by Charles Babbage.

c) Hyper-Text is the type of text which is specially coded with the help of some standard coding language called as HyperText Markup Language (HTML).

d) HTTP is set of rules for transferring data from one computer to another.

6) Which of the following statements is not True?

a) Any type of content can be exchanged with the help of HTTP, as long as server and client are compatible with it.

b) Once data is exchanged then servers and client still stay connected with each other.

c) It is a request and response protocol based on client and server requirements.

d) None of the given choices.

7) HTTP is connection less protocol because after connection is closed _____

a) Server does not remember anything about client and client does not remember anything about server.

b) Server always remembers everything about client and client remembers everything about server.

c) Server does not remember anything about client and the client remembers everything about server.

d) Server always remembers everything about client and client does not remember anything about server.

8) Which of the following statements is not true regarding HTTP Non-Persistent connection?

a) The non-persistent connection has connection type 1.0

b) It ensures the transfer of multiple objects over a single connection.

c) It takes the connection time of 2RTT + file transmission time.

d) It takes the first RTT (round-trip time) to establish the connection between the server and the client

9) Which of the following is not True?

a) Web is a collection of websites or web pages stored in web servers and connected to local computers through the internet.

b) WWW, along with internet, enables the retrieval and display of text and media to your device.

c) WWW is a project created, by Charles Babbage in 1989.

d) An organization, named World Wide Web Consortium (W3C), was developed for development in web.

10) The WWW today is a client-server service, in which a client using a browser can access a service using a server.

a) limited

b) distributed

c) vast

d) None of the given choices

11) In a URL, the ____ is the computer on which the information is located.

a) path

b) protocol

c) host

d) None of the given choices

12) In a URL, the _____ is the full name of the file where the information is located.

a) path

b) protocol

c) host

d) None of the given choices

13) Which of the following is not a characteristic of a VPN?

a) It is a secure network

b) It is deployed over a shared infrastructure

c) It may use tunneling techniques

d) It does not provide any cost savings to alternate connectivity options

14) What would be a good characterization of a VPN tunnel established between a telecommuter's PC using a VPN client software and a VPN Concentrator at the HQ location?

a) Remote access VPN

b) Site to site VPN

c) Extranet VPN

d) LAN to LAN VPN

15) Which of the following security technique provides confidentiality (data privacy) service?

a) Hashing

b) Key exchange

c) Encryption

d) All the given choices

Answers: Self-Assessment

1. C 2. D 3. D 4. C 5. B 6. B 7. A 8. B 9. C 10. B 11. C 12. A 13. D 14. A 15. C

UNIT - 14

1. In secret key encryption, the secret key is used for .....

A. Encryption only

B. Encryption and decryption

C. Decrypting the encrypted message

D. None of the given choices

2. In the public key encryption, the public key is used for ..... of the massage.

A. Encryption

B. Decryption

C. Encryption and Decryption

D. None of the given choices

3. Encryption and decryption normally takes care of ..... of a network.

A. Consistency

B. security

C. authentication

D. privacy

4. In public key encryption the private is used to ..... the message to the plaintext.

A. Encrypt

B. Encryption and Decryption

C. Decrypt

D. None of the given choices

5. ..... involves the interception of data packets by a computer successfully pretending to be a trusted server/resource.

A. IP spoofing

B. Brute force attack

C. Sniffing

D. Phishing

6. An Asymmetric key cipher uses

A. 1 key

B. 2 key

C. 3 key

D. 4 key

7. The shift cipher can also be referred as:

A. Caeser Cipher

B. Fistel Cipher

C. RSA

D. None of the given choices

8. The cryptographic Algorithms or the ciphers are divided into:

A. Two groups

B. Four groups

C. One single group

D. Zero single groups

9. In symmetric key cryptography, the key used by the sender and the receiver is:

A. Different

B. Shared

C. Two keys are used

D. Same keys are used

10. Cryptography is a word with Greek origin which means:

A. Corrupting data

B. Secret writing

C. Open writing

D. Closed writing

11. In cryptography when we treat the text at the bit level, then every character is replaced by:

A. 4 bits

B. 6 bits

C. 8 bits

D. 10 bits

12. Modern cryptanalysis makes simple substitution and transposition ciphers obsolete.

A. True

B. False

13. According to the unicity distance of English, 20 letters of ciphertext are required to crack a mixed alphabet simple substitution.

A. True

B. False

14. In substitution cipher, a bijective function is used on the characters' positions to encrypt and an inverse function to decrypt.

A. True

B. False

15. Traditionally, the ciphertext is written out in blocks of fixed length, omitting punctuation and spaces.

A. True

B. False

Answer for Self Assessment

1. B 2. A 3. D 4. C 5. A

6. B 7. A 8. A 9. B 10. B

11. C 12. A 13. B 14. A 15. A