Total number of printed pages:6 **D/4th/DCSE402**

2021

COMPUTER COMMUNICATION & NETWORKING

Full Marks: 60

Time: Two hours

The figures in the margin indicate full marks for the questions.

A. Multiple Choice Questions 1 x 20=20

1. _____ network topology requires a central controller or hub for its operation.

   a. Star

   b. Mesh

   c. Ring

   d. Bus

2. Flow control and error control are tasks performed by the _____.

   a. Data link layer

   b. Network layer

   c. Transport layer

   d. Both a and c

3. Stop-and-Wait ARQ is a special case of Go-Back-N ARQ in which the size of the sending window is _____.

   a. 0

   b. 1

   c. 2

   d. n

4. Piggybacking is a transmission mechanism where acknowledgements are sent together with _____packets.

   a. Header
   b. SYN
   c. Data
   d. NAK

5. NAK is a _____ acknowledgement.

   a. positive
   b. negative
   c. neutral
   d. none of the above

6. In _____ protocols, all stations have equal control over the communication channel.

   a. Random Access
   b. Reservation
   c. Channelization
   d. None of the above

7. CSMA method used mainly in wireless networks is known as _____.

   a. 1-persistent CSMA
   b. p-persistent CSMA
   c. CSMA/CD
   d. CSMA/CA

8. The multiple-access method in which available bandwidth of a link is shared between different stations is known as _____.

   a. FDMA
   b. TDMA
   c. CDMA
   d. All of the above

9. IPv4 address is of _____ length.

   a. 16 bits

   b. 32 bits

   c. 48 bits

   d. 64 bits

10. 135.58.24.17 is an example of a _____ IP address.

   a. class A

   b. class B

   c. class C

   d. none of the above

11. a. Default mask for a class C IP address is _____.

   a. /8

   b. /16

   c. /24

   d. /32

12. Network layer in the Internet uses the _____approach for data transmission.

   a. Circuit switching

   b. Datagram

   c. Virtual circuit switching

   d. None of the above

13. A communication mechanism in which a transmitted packet is received by every device on the network is known as _____.

   a. Broadcasting

   b. Multicasting

c. Unicasting

d. None of the above

14. BGP is an example of a/an _____ routing protocol.

a. Intra domain

b. Inter domain

c. Hybrid

d. None of the above

15. A routing loop is encountered in which of the following routing protocols?

a. Distance vector routing

b. Link state routing

c. Both a and b

d. None of the above

16. Transport layer deals with _____.

a. application to application communication

b. process to process communication

c. node to node communication

d. host to host communication

17. 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 of the above

18. Delimiting and synchronization of data exchange is provided by _____.

a. Presentation layer

b. Session layer

c. Transport layer

d. Link layer

19. Socket address is a combination of _____.

a. MAC address and IP address

b. IP address and port address

c. MAC address and port address

d. None of the above

20 HTTP uses the well-known port number _____ for communicating with the server.

a. 21

b. 23

c. 53

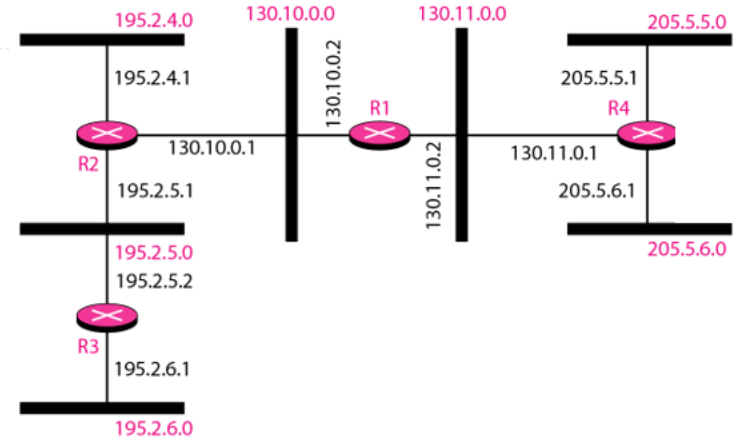
d. 80

B. Very Short Question 2*6=12

1. What is the role of a gateway device in networking?
2. Define minimum hamming distance.
3. Discuss the advantages of sliding window protocols over stop-and-wait protocols.
4. What do you mean by classless addressing? What is its advantage over the traditional classful addressing technique?
5. State the differences between TCP and UDP.
6. What is remote login?

C. Short Question 4*7=28

1. Discuss any two(2) types of switching mechanisms used in networking.
2. Explain Go-Back-N ARQ with the help of a diagram.
3. Discuss how multiple stations can transmit data using CDMA with the help of an example.
4. A block of addresses is granted to a small organization and one of the addresses is 205.16.37.39/28. Find out the first address and the last address in the block.
5. Consider the following autonomous system(AS) consisting of different networks and routers.



Now apply the Routing Information Protocol(RIP) to the above AS and generate the routing tables for routers R1 and R2.

6. Discuss the 3-way handshaking mechanism for connection establishment in TCP with the help of a diagram.

7. Write a brief note on electronic mail(E-Mail).

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