2/02/20 3005

[Total No. of Questions - 9] [Total No of Printed Pages - 3]

Dec.-22-0218

CS-501 Computer Network (CSE, IT)

B.Tech. 5th (CBC

Time : 3 Hours

Max. Marks : 60

The candidates shall limit their answers pr isely within the answer-book (40 pages) issued to them and no su lementary/continuation sheet will be issued.

Note : Question no. 9 is mandatory. All her questions have a choice.

SECTION - A

1. (a) Television channels are 6 MHz wide. How many bits/sec can be sent if four level digital si als are used? Assume a noiseless channel. (5)

   (b) Explain the concept of FHSS in detail. (5)

OR

2. (a) Explain the TDM and FHSS multiplexing techniques with example. (5)

   (b) Explain the advantages of star topology in detail. (5)

3. Sixteen-bit messages are transmitted using the hamming code. How many check bits are needed to ensure that the receiver can detect and correct single bit errors? Show the bit pattern transmitted for the message 1101001100110101. Assume that even parity is used in the hamming code. (10)

OR

4. (a) A **slotted** ALOHA network transmits 200-bit frames using a shared channel with a 200 kbps bandwidth. Find the throughput if the system (all stations together) produces.

   (i) 1000 frames per second

   (ii) 500 frames per second

   (iii) 250 frames per second (5)

   (b) Write short notes on Fast Ethernet and FDDI (5)

5. (a) Explain the difference between virtual circuit approach and datagram approach. (5)

   (b) What is the purpose of ICMP protocol? Explain principal ICMP message types. (5)

OR

6. (a) An Internet Service Provider (ISP) has the following chunk of CIDR-based IP addresses available with it: 245.248.128.0/20. The ISP wants to give half of this chunk of addresses to Organization A, and a quarter to Organization B, while retaining the remaining with itself. What will be the valid allocation of addresses to A and B? (5)

   (b) What is the difference between link state routing and distance vector routing? (5)

7. (a) Explain the SCTP protocol in detail. (5)

   (b) Write short notes on Remote logging and DNS. (5)

OR

8. (a) What is the difference between TCP and UDP? (5)

   (b) Write short note on SNMP protocol. (5)

9. (i) Name the services offered by the IEEE 802.11 standard.

   (ii) What is the requirement of virtual LAN?

[P.T.O.]

(iii) What is the difference between IPv4 and IPv6?

(iv) The subnet mask for a particular network is 255.255.31.0. Which of the following pairs of IP addresses could belong to this network?(p) 172.57.88.62 and 172.56.87.233 (q) 10.35.28.2 and 10.35.29.4 (r) 191.203.31.87 and 191.234.31.88 (s) 128.8.129.43 and 128.8.161.55.

(v) What is the role of presentation layer?

(vi) What is the purpose of HDLC protocol?

(vii) What is the difference between logical address and physical address?

(viii) What is CIDR approach?

(ix) Explain the concept of bridge and switch with diagram.

(x) What is sliding window protocol for flow control?

(10×2=20)