P995

[3664]-211

B.E. (Electronics)   Sem - I
COMPUTER NETWORKS
(2003 Course) (404201)

Time : 3 Hours]   *[Max. Marks : 100*

Instructions to the candidates:

  1)   Answer any three questions from each section.
  2)   Answers to the two sections should be written in separate books.
  3)   Neat diagrams must be drawn wherever necessary.
  4)   Figures to the right indicate full marks.
  5)   Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.
  6)   Assume suitable data, if necessary.

SECTION - I

Q1) a) What is protocol Architecture? What is peer protocol? Explain advantages of TCP/IP architecture Vs ISO-OSI architecture.   **[8]**

   b) Compare Bus Vs Star network topology.   **[4]**

   c) What are different Service primitives in protocol communication. **[4]**

OR

Q2) a) Explain Broadcast network and point to point network with proper example.   **[8]**

   b) Explain the applications of LAN Vs WAN communication with proper example.   **[4]**

   c) Explain the application of Distributed networks in Internet system? **[4]**

Q3) a) What is the maximum bit rate for a telephone line with BW 3700 Hz and 35 db SNR? If the BW considered is 3.2 kHz with same SNR, what will be the maximum data rate possible.   **[8]**

   b) Explain the advantages of fiber optics cable in Modern networks? What technology is supported for backbone networks?   **[4]**

   c) Explain the disadvantages of circuit switching network in detail. **[4]**

OR

Q4) a) Explain advantages, applications and types of Modems for Internet communication. [8]

b) Compare LEO Vs MEO Vs GEO. [4]

c) What is Asynchronous TDM system? Explain where it is used? [4]

Q5) a) Construct a systematic (7, 4) cyclic code using generator polynomial $g(x) = x^3 + x^2 + 1$ for the message 1010. [6]

b) What is the process of Framing? Explain character stuffing and character count methods in detail. [6]

c) Compare Go-back-n Vs Selective repeat technique. [6]

OR

Q6) a) Draw and explain the Frame format of PPP protocol. [6]

b) Compare collision and collision free protocols with suitable example. [6]

c) Explain the Frame format for the fast Ethernet. [6]

SECTION - II

Q7) a) Compare the leaky bucket and token bucket system in detail. [8]

b) Explain the link state routing and its features. [4]

c) Compare dynamic routing Vs Static routing. [4]

OR

Q8) a) Explain the TCP connection establishment & connection release procedure in detail. [8]

b) What is network congestion and how to solve this problem. [4]

c) Compare TCP and UDP protocols. [4]

Q9) a) Draw and explain basic encryption model briefly. Compare private key system Vs Public key security system. [8]

b) Explain the Domain name finding procedure at client end in enterprise network? [4]

c) Write a short note on HTML programming. [4]

OR

Q10) a) Explain RSA algorithm in detail. [8]

b) Write a short note on Socket programming. [4]

c) Explain the SMTP and POP3 protocols for EMAIL system? [4]

Q11) a) Compare IPv4 and IPv6. [6]

b) Explain Telnet communication in INTERNET system. [6]

c) Explain ARP communication for layer-2 switch based LAN system. [6]

OR

Q12) a) What are the different types of IP addresses? Explain static IP allocation and Dynamic IP allocation briefly. [6]

b) Explain IGMP applications, specifying the IP address range and procedure in brief. [6]

c) Explain BOOTP protocol requirement with suitable example. [6]

✳ ✳ ✳