K 1055

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2004.

Fifth Semester

Information Technology

IF 352 — COMPUTER NETWORKS

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is meant by differential encoding?
2. What modulation technique is used in ADSL?
3. What is the use of P/F bit in the HDLC frame?
4. What is adaptive routing?
5. Give examples for UBR application.
6. What is meant by virtual path?
7. What is the use of hub?
8. What is the length of the 802.3 MAC address?
9. Give two services offered by the session layer.
10. What is the use of mail transfer agent?

PART B — (5 × 16 = 80 marks)

11. (i) Explain the features of the various unguided transmission media in terms of frequency band, modulation scheme used, noise immunity, bandwidth and data rate. (8)

    (ii) What are the essential characteristics of an encoding scheme? Explain. (8)

12. (a) (i) Explain 1 bit sliding window protocol. (8)

    (ii) Explain the various unnumbered HDLC frames. (8)

    Or

    (b) (i) Write a note on the various internet working devices. (9)

    (ii) Explain the various congestion control algorithms. (7)

13. (a) (i) Compare Frame Relay and X.25 network architectures. (8)

(ii) Explain the Frame Relay protocol stack with a neat block diagram. (8)

Or

(b) (i) Draw the ATM cell format and explain the various fields. (8)

(ii) Explain the various ATM services. (8)

14. (a) Explain the frame format, operation and ring maintenance feature of IEEE 802.5 MAC protocol. (16)

Or

(b) (i) Compare the channel efficiency of CSMA/CD, ALOHA, slotted ALOHA. (6)

(ii) Explain the various LAN topologies. (10)

15. (a) Discuss the various technical issues of transport layer. (16)

Or

(b) (i) Explain DES encryption algorithm. How is it different from triple DES? (8)

(ii) Explain active and passive attacks. (8)
