J 1245

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2006.

Seventh Semester

Information Technology

IF 452 — NETWORK DESIGN SECURITY AND MANAGEMENT

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. X.25 protocol is similar to asynchronous transfer mode. How?
2. What is broadband ISDN?
3. What are primary goals in providing security?
4. What are security assets?
5. Define symmetric encryption.
6. What is Kerberos protocol?
7. What is secure electronic transaction?
8. What are trusted systems?
9. How to organize network management?
10. Bring out the salient features of SNMP V3.

PART B — (5 × 16 = 80 marks)

11. (i) How is a topology for LAN chosen? Explain with an example. (4)

    (ii) Explain the different switching techniques used in networks. (4)

    (iii) How do the LANs differ? Explain. (4)

    (iv) List the network components required for the design of campus network. (4)

12. (a) (i) Explain methods to improve the performance of WAN. (8)

    (ii) Describe the services offered by the ISDN based circuit switch network. (4)

    (iii) Compare flat with hierarchical WAN topology. (4)

Or

(b) (i) Describe the architecture of dedicated circuit networks. (8)

(ii) What are packet routing methods? Explain. (4)

(iii) Mention the steps involved in the design of IP over frame relay. (4)

13. (a) (i) What are security threats? Explain. (5)

(ii) Why is network security difficult to achieve? Explain. (5)

(iii) Write short notes on symmetric key cryptography. (6)

Or

(b) (i) Explain RSA algorithm with an example. (6)

(ii) Write short notes on public key cryptography. (6)

(iii) Between symmetric and public cryptography, which method provides stronger security, more convenient and better performance. Explain. (4)

14. (a) (i) Describe the architecture of IP sec authentication header. (5)

(ii) Write short notes on encapsulated security protocol. (8)

(iii) List the functions of firewalls. (3)

Or

(b) (i) State and explain the components required for intrusion detection system. (8)

(ii) Discuss in detail the functions of SSL. (4)

(iii) Describe the structure of TLS handshake protocol. (4)

15. (a) (i) Describe the architecture of SNMP. (5)

(ii) Explain the benefits and drawbacks of SNMP. (8)

(iii) Network management increases its complexity. Justify. (3)

Or

(b) (i) What are the key functional areas of network management? Explain. (6)

(ii) State and explain the security aspects for SNMP. (6)

(iii) Illustrate various stages of network management. (4)
