

**K 1226**

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

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. How does LAN differ from one another?
2. How can the performance of LAN and WAN be improved?
3. State some recent issues for WAN.
4. What are the design principles of ISDN?
5. What is authentication?
6. What is IP routing?
7. What is network security?
8. Why is network security difficult?
9. List the benefits of distributed network management.
10. What are the requirements for network management?

PART B — (5 × 16 = 80 marks)

11. (i) What are the components of LAN? Explain. (4)
- (ii) What is a Virtual LAN? Discuss in detail. (4)
- (iii) State and explain the principles of network design. (8)

12. (a) (i) Describe the network services available for WAN. (8)
- (ii) What are the different types of WAN? Explain. (8)

Or

- (b) (i) Write notes on ISDN Architecture. (12)
- (ii) What are the advantages of virtual circuits and virtual paths? (4)
13. (a) (i) What are the key issues of symmetric key cryptography? Explain. (8)
- (ii) State and explain the principles of public key cryptography. (8)

Or

- (b) (i) Explain RSA algorithm with an example. (10)
- (ii) Compare symmetric key cryptography with public key cryptography. (6)
14. (a) (i) What are the limitations of firewalls? Explain. (6)
- (ii) What are internet security threats? Explain. (10)

Or

- (b) (i) Assume a sender A wants to send confidential e-mail M to receiver B. How can it be achieved? (4)
- (ii) Write short notes on IP security. (6)
- (iii) Assume a client C wants to communicate with a server S using Kerberos protocol. How can it be achieved? (6)

15. (a) (i) Identify the key functional areas of network management. Explain. (8)

(ii) Describe the network monitoring architecture. (8)

Or

(b) (i) Give an infrastructure for network management. (10)

(ii) State and explain SNMP application. (6)