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**R 8411**

(10) B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2006.

(6) Seventh Semester

(8) Information Technology

(8) IF 452 — NETWORK DESIGN SECURITY AND MANAGEMENT

Time : Three hours

Maximum : 100 marks

(16) Answer ALL questions.

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10) PART A — (10 × 2 = 20 marks)

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(6)
1. List the characteristics of a well designed network.
  2. What is meant by 80/20 rule?
  3. Give an example for non-scalable and scalable routing protocol.
  - 8) 4. What is a PVC? Give the advantages of it.
  - 3) 5. Securing electronic documents is more challenging than securing paper documents. Give three reasons.
  - 6) 6. Define unconditionally secure and computationally secure encryption schemes.
  7. What is a key ring?
  8. What is a nonce?
  9. Why should the use of network resources be tracked?
  10. Define response time and utilization.

PART B — (5 × 16 = 80 marks)

11. (a) Compare flat versus hierarchical design of WAN topology. (16)

Or

- (b) (i) List the issues to be considered in deploying serial links in a network. (4)
- (ii) Explain fundamental IP routing design. (12)

12. (a) (i) List the design objectives of Network design. (8)
- (ii) Explain in detail the fundamental design principles of Network design. (8)

Or

- (b) (i) What is resilience? Discuss how resilience could be achieved in a network. (8)
- (ii) Discuss how to decide whether to design Ethernet switching or shared Ethernet. List the advantages if any, of Ethernet switching. (8)
13. (a) (i) Explain in detail with an example the play fair cipher encryption technique. (6)
- (ii) Explain in detail the simplified DES encryption algorithm. (6)
- (iii) Give the strength of DES. (4)

Or

- (b) (i) Compare conventional and public key encryption. (4)
- (ii) Explain in detail about the public key certificates and secret key distribution with confidentiality and authentication. (12)
14. (a) (i) Summarize the services offered by PGP. (4)
- (ii) Give the significance of the fields in signature component of PGP message format. (4)
- (iii) What is integrity check value? Give its significance. (4)
- (iv) Write notes on Anti-Replay service. (4)

Or

- (b) (i) Summarize the types of security threats faced in using the web. (6)
- (ii) Explain in detail the SSL architecture. (10)

- (8) 15. (a) (i) Explain in detail the architectural model of a network management system. (4)
- (8) (ii) Write notes on the following performance indicators :
- (1) Availability
- (2) Response time. (2 × 6)

Or

- (b) (i) What is meant by trap-directed polling? (6)
- (ii) Explain in detail the proxy configuration. (6)
- (iii) List the limitations of SNMP. (4)
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