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**M 2213**

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2008.

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. List down the possible values for a sub-net mask.
2. What is the effect of Layer 3 switching in load balancing?
3. Compare collapsed and distributed backbone implementations.
4. List down the strength of DES.
5. What is steganography?
6. Compare transport and tunnel mode ESP.
7. Sketch out the flow diagram of SSL handshake protocol.
8. What is the role of proxy agent in Network Management architecture?
9. Using the appropriate application wide data typed write a Macro to add an object under IP group in MIB.
10. Specify the features of these IP addresses 0.0.0.0, 255.255.255.255, 194.168.0.1 and 227.220.0.0.

PART B — (5 × 16 = 80 marks)

11. (a) Cedacri, a leading Information Technology (IT) provider for financial institutions in Italy, chose a Cisco data center infrastructure to help reduce the cost of winning new customers in Milan, one of Italy's key financial centers. The Cisco technology helped Cedacri deliver expertise and services to financial institutions without the prohibitive cost of building a local data center. Banking institutions will benefit from less expensive long-distance data communications. The Cisco data center infrastructure is based on a Cisco Service-Oriented Network Architecture (SONA) framework that enables businesses like Cedacri to develop integrated network solutions. These solutions optimize applications, business processes and resources and provide a scalable infrastructure for future application and service deployment. For the above scenario develop a topology and illustrate the necessity for the internetworking devices used for implementing the above network infrastructure. (16)

Or

- (b) Discuss the importance of predictability and list out the fundamental network design principles. (16)
12. (a) (i) Explain in detail Campus Network Design. (8)
- (ii) Compare flat and hierarchical WAN design. (8)

Or

- (b) Discuss in detail the following :
- (i) IP addressing plan design. (8)
- (ii) WAN design parameters. (8)
13. (a) (i) Discuss RSA attacks in detail. (8)
- (ii) Show the ways in which Hash code can be used provide message authentication. (8)

Or

- (b) (i) State the principles of public key cryptosystems. (6)
- (ii) Explain an authentication service, which relies exclusively on symmetric encryption in detail. (10)

14. (a) Write notes on :
- (i) PGP (8)
  - (ii) Web security. (8)

Or

- (b) Explain IP Sec services in detail. (16)

15. (a) (i) With an example explain how objects and tables are defined for inclusion in MIB. (8)
- (ii) Explain various SNMPV1 message formats in detail. (8)

Or

- (b) Explain TCP/IP Network Management architecture with SNMP in its protocol suite. (16)