G 6148

M.E. DEGREE EXAMINATION, MAY/JUNE 2007.

Elective

Communication Systems

CO 1630 — COMMUNICATION NETWORK SECURITY

(Common to M.E. Digital Communication and Network Engineering and M.E. Computer and Communication)

(Regulation 2005)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define transposition and substitution in cryptography.

2. Mention the various strength of DES.

3. What is blowfish?

4. Give the characteristics of advanced symmetric block ciphers.

5. What are the merits and demerits of public key system?

6. Define Hash function.

7. Compare IPV4 and IPV6 security aspects.

8. What is transport layer security?

9. How will you detect an intruder?

10. Define firewall.

PART B — (5 × 16 = 80 marks)

11. (a) (i) With a neat diagram explain the OSI security architecture. (8)

(ii) Discuss in detail any one classical encryption technique. (8)

Or

(b) (i) What is block cipher? Discuss the design principles for it. (10)

(ii) Describe the different modes of operation of block cipher method. (6)

12. (a) (i) What is contemporary symmetric cipher? Explain it. (8)

(ii) Discuss the function of triples DES. (8)

Or

(b) (i) Describe the operation of RC4 – Stream cipher. (8)

(ii) Discuss in detail the key distribution methods. (8)

13. (a) (i) With an example, describe the RSA algorithm. (10)

(ii) Write a brief note on key management. (6)

Or

(b) (i) Explain the operation of Hash algorithm. (10)

(ii) What is digital signature? Discuss the usage of it. (6)

14. (a) (i) Describe the different security aspects for E-mail. (8)

(ii) What is Kerberos? Explain it. (8)

Or

(b) (i) Discuss in detail the IP security architecture. (10)

(ii) Write a brief note on web security. (6)

15. (a) (i) What is the necessity of password in a system? How will you manage it? (8)

(ii) What is a virus? Describe the problems associated with virus in a system. (8)

Or

(b) (i) Describe the design principles of a firewall. (10)

(ii) What are trusted systems? Explain it. (6)