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Eighth Semester B.E. Degree Examination, June/July 2017

Network Security

Time: 3 hrs. Max. Marks: 100

Note: Answer FIVE full questions, selecting at least TWO questions from each part.

PART - A

- 1 a. Define passive and active security attacks. Discuss the functioning of following attacks with diagrams:
 - i) Masquerade

- ii) Replay
- iii) Modification of messages
- iv) Denial of service

(10 Marks)

- b. With a neat diagram, discuss the functioning of network security model. List four basic tasks of designing security model. (10 Marks)
- 2 a. Encrypt the plain text "HELLO" using the play fair cipher with the key "EXAM". (08 Marks)
 - b. Explain the operation of Caeser cipher with an algorithm. Derive the cipher text using Caeser Cipher for the following plain text message with key length K = 3, "logic". (06 Marks)
 - e. Explain the single round of DES-encryption model.

(06 Marks)

- a. Explain the RSA algorithm. In a RSA algorithm system it is given that p = 7, q = 11, e = 17 and M = 8. Find the cipher text "c" and decrypt "c" to set plain text M.
 - b. Describe the requirements for a Hash function.

(05 Marks)

- c. Explain Diffie Hellman key exchange algorithm with example.
- (05 Marks)
- 4 a. With neat diagram, explain digital signature algorithm (DSA).
- (10 Marks)
- b. List and explain the general approach to deal with replay attacks.
- (10 Marks)

PART - B

- 5 a. Discuss Security Socket Layer (SSL) record protocol in terms of fragmentation, compression and encryption. (10 Marks)
 - b. Describe the sequence of events that are required for a transaction in Secure Electronic Transaction (SET). (10 Marks)
- 6 a. Briefly describe the three classes of intruder.

(06 Marks)

b. Explain approaches to intrusion detection system.

(04 Marks)

c. Give a detailed account on UNIX password management.

(10 Marks)

7 a. Briefly describe the most significant types of virus.

(10 Marks)

b. With a neat diagram, explain digital immune system.

(10 Marks)

8 a. Explain the types of firewalls in detail with necessary sketch.

(09 Marks)

b. Explain briefly about the trusted systems.

(06 Marks)

c. Briefly discuss the concept of reference monitor with diagram.

(05 Marks)

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