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06EC832

**Eighth Semester B.E. Degree Examination, June 2012**  
**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. Explain the operation of Caesar Cipher with an algorithm. Derive the cipher with an algorithm. Derive the Cipher text using Caesar Cipher for the following plain text message “WORK IS WORSHIP”. (06 Marks)
- b. With a block diagram, explain Feistel encryption and decryption algorithm. (10 Marks)
- c. Write a note on one-time pad. (04 Marks)
- 3 a. Create a play fair matrix using key word “COMPUTER” and hence obtain the ciphertext for the plaintext message “Parrot”. (10 Marks)
- b. With a block diagram, explain DES encryption and key generation technique. (10 Marks)
- 4 a. Discuss Deffie Hellman key exchange algorithm. Explain how Deffie-Hellman algorithm is used to exchange secret key. (10 Marks)
- b. Discuss RSA and DSS approaches of digital signature standards with diagrams. (10 Marks)

**PART – B**

- 5 a. Discuss SSL record protocol in terms of fragmentation, compression and encryption. (10 Marks)
- b. Discuss Secure Electronic Transaction (SET) protocol with neat diagram. (10 Marks)
- 6 a. Describe following intrusion detection mechanisms:
  - i) Statistical anomaly detection. (10 Marks)
  - ii) Rule-based detection. (10 Marks)
- b. Explain the architecture of distributed intrusion detection system. (10 Marks)
- 7 a. Explain various phases of a virus that undergoes in its life time. Discuss various types of viruses. (10 Marks)
- b. Discuss application level gateway and circuit level gateway configurations with neat diagrams. (10 Marks)
- 8 a. Explain three types of firewall configurations with diagrams. (10 Marks)
- b. Discuss the concept of reference monitor with diagram. List security rules of reference monitor. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.