USN |__|__|__|__|__|__|__|__|__|__| 10EC832

Eighth Semester B.E. Degree Examination, Dec.2017/Jan.2018
Network Security

Time: 3 hrs.
Max. Marks:100

Note: *Answer any FIVE full questions, selecting atleast TWO questions from each part.*

PART – A

1 a. Classify the various security attacks and define them. (06 Marks)
   b. Write a model for network security and explain in detail. (06 Marks)
   c. Encrypt the plaintext "Pay more money" using Hill cipher with the key below :

   $$key = \begin{bmatrix} 17 & 17 & 5 \\ 21 & 18 & 21 \\ 2 & 2 & 19 \end{bmatrix}$$

   Show calculations and cipher text. (08 Marks)

2 a. Encrypt the message "We will meet on Monday" using playfair cipher with a key "STORY". (06 Marks)
   b. With a neat diagram explain the single round of DES encryption. (08 Marks)
   c. Explain the counter mode of block ciphers. (06 Marks)

3 a. Perform encryption and decryption using RSA if P = 3, q = 11, e = 7 and M = 5. (08 Marks)
   b. With the help of a block diagram, explain the process of public key exchange with the help of certificate authority. (06 Marks)
   c. With neat diagrams, describe any 3 ways in which hash functions can be used. (06 Marks)

4 a. With neat diagram, explain digital signature algorithm. (08 Marks)
   b. List the requirements of digital signature. (04 Marks)
   c. Explain arbitrated digital signatures technique. (08 Marks)

PART – B

5 a. Explain the various phases of SSL handshake protocol. (10 Marks)
   b. List and explain the SET participants with neat diagram. (10 Marks)

6 a. Briefly describe the 3 classes of intruder. (06 Marks)
   b. Explain the password selection strategies in detail. (08 Marks)
   c. Explain the architecture of distributed intrusion detection in detail. (06 Marks)

7 a. Give the taxonomy of malicious programs and explain in brief. (08 Marks)
   b. Discuss the following :
      i) E–mail viruses
      ii) Phases of virus
      iii) Worms. (12 Marks)

8 a. What are the different firewall configurations and explain it? (10 Marks)
   b. What are the different types of firewall and explain packet filtering router in detail. (10 Marks)

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