Eighth Semester B.E. Degree Examination, June / July 2014
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. Distinguish between passive and active attacks. **(04 Marks)**
   b. Explain the different categories of security services. **(06 Marks)**
   c. Draw the block diagram of network security model and explain it. Mention basic tasks in designing a particular security service. **(10 Marks)**

2 a. Encrypt the plain text "PAY MORE MONEY" using Hill Cipher with the key.

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

   Show the calculations and cipher text. **(10 Marks)**
   b. Draw the single round DES algorithm and explain the process in detail. **(10 Marks)**

3 a. In a RSA algorithm system it is given that $p = 3$, $q = 11$, $e = 7$ and $M = 5$. Find the cipher text 'C' and decrypt 'C' to get plaintext M. **(06 Marks)**
   b. Explain Diffie-Hellman key exchange algorithm with example. **(06 Marks)**
   c. What is key management? Explain distribution of secret key using public key cryptography. **(08 Marks)**

4 a. Explain arbitrated digital signatures technique. **(08 Marks)**
   b. With neat diagram, explain digital signature algorithm. **(08 Marks)**
   c. Illustrate replay attacks. **(04 Marks)**

PART – B

5 a. Draw the block diagram of handshake protocol action and explain it. **(08 Marks)**
   b. Explain in detail: i) Purchase request   ii) Payment authorization transaction supported by Secure Electronic Transaction (SET). **(08 Marks)**
   c. List the features of secure socket layer. **(04 Marks)**

6 a. What are the different types of intrusion detection system and explain it? **(10 Marks)**
   b. Mention the advantages and disadvantages of signature-based detection. **(04 Marks)**
   c. Explain the password selection strategies. **(06 Marks)**

7 a. Briefly describe the types of viruses. **(08 Marks)**
   b. With a neat diagram, explain digitial immune system. **(08 Marks)**
   c. Difference between worm and virus. **(04 Marks)**

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

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