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10EC832

Eighth Semester B.E. Degree Examination, June/July 2015

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. Explain X.800 security mechanisms, in detail. (10 Marks)
 - b. Differentiate between active and passive attacks. (04 Marks)
 - c. In S-DES, 10 bit key is 1011010011 find the sub keys k_1 and k_2 if:
 $P_{10} = 35274101986$; $P_8 = 637485109$. (06 Marks)

- 2
 - a. Decrypt the cipher text "CQSUBJNR" using Hill cipher technique with the key :
 $\begin{bmatrix} 7 & 8 \\ 19 & 3 \end{bmatrix}$. Find the plain text [Hint : a = 0, b = 1, - - - - - z = 25]. (10 Marks)
 - b. How are the disadvantages of ECB mode of operation overcome in the CBC mode of operation? (10 Marks)

- 3
 - a. Perform encryption and decryption using RSA if $p = 7$, $q = 11$, $e = 13$ and $M = 5$. (08 Marks)
 - b. Explain the public key distribution of secret key with confidentiality and authentication. (04 Marks)
 - c. With neat schematics, explain message authentication code. (08 Marks)

- 4
 - a. What is a digital signature? List the properties and requirements of digital signature. (10 Marks)
 - b. Discuss the various approaches of one – way authentication protocol. (10 Marks)

PART – B

- 5
 - a. What are the services provided by SSL record protocol for SSL connections? Explain overall operation of SSL record protocol. (10 Marks)
 - b. List and explain the SET participants with neat diagram. (10 Marks)

- 6
 - a. Explain the techniques used for intrusion. (06 Marks)
 - b. Write short notes on honey pots. (04 Marks)
 - c. Explain password selection strategies in detail. (10 Marks)

- 7
 - a. Write short notes on Trojan horses. (05 Marks)
 - b. Explain the various phases that a virus undergoes during its life time. (05 Marks)
 - c. Discuss the two most important advanced antivirus techniques. (10 Marks)

- 8
 - a. List and explain the different attacks on packet filtering routers along with appropriate counter measures. (10 Marks)
 - b. Explain briefly the concept of trusted systems. (10 Marks)

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