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10EC832

Eighth Semester B.E. Degree Examination, Feb./Mar. 2022
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. What are security attacks, security mechanisms and security services? Briefly explain. (06 Marks)
b. Explain Active and Passive attacks with their categories. (08 Marks)
c. Encrypt the message “Network Security” using key 5 3 1 4 2 6 using double transposition technique. (06 Marks)
- 2 a. Encrypt and decrypt the message “FRIDAY” using Hill cipher given $K = \begin{bmatrix} 7 & 8 \\ 19 & 3 \end{bmatrix}$ (10 Marks)
b. With a neat diagram, explain single round of DES encryption. (10 Marks)
- 3 a. Write RSA algorithm perform encryption and decryption using RSA given $p = 5$, $q = 11$, $e = 3$, $M = 9$. (10 Marks)
b. Explain Deffie-Hellman key exchange algorithm. Find shared key and public keys of 2 users A and B if $q = 11$, $\alpha = 5$, $X_A = 3$ and $X_B = 2$. (04 Marks)
c. Explain public key authority technique for public key distribution. (06 Marks)
- 4 a. With neat diagram, discuss the basic uses of hash function. (12 Marks)
b. Write the Digital Signature Algorithm (DSA). Explain signing and verification functions. (08 Marks)

PART – B

- 5 a. Explain SSL (Secure Socket Layer) with its important concepts and parameters. (10 Marks)
b. Describe the sequence of events that are required for a transaction is Secured Electronic Transaction (SET). (10 Marks)
- 6 a. Explain Distributed intrusion detection. (10 Marks)
b. With neat diagram explain UNIX password scheme. (10 Marks)
- 7 a. Give the taxonomy of malicious programs. Explain. (08 Marks)
b. List and explain the phases that virus goes through during its life time. (08 Marks)
c. Write a note on Macro viruses. (04 Marks)
- 8 a. Give the capabilities and limitations of firewalls. (08 Marks)
b. Explain the different types of firewalls with neat sketch. (12 Marks)

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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.