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10EC832

Eighth Semester B.E. Degree Examination, Aug./Sept. 2020
Network Security

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. What are the five categories of X800 security services and explain it. (11 Marks)
b. Mention the basic tasks are to be considered while designing a particular security service. (04 Marks)
c. Write the few examples of security attacks. (05 Marks)
- 2 a. Encrypt the plaintext “FRIDAY” using Hill cipher with the key $\begin{pmatrix} 7 & 8 \\ 19 & 3 \end{pmatrix}$. Show your calculation and also calculate the corresponding decryption of the ciphertext to recover the original plaintext. (10 Marks)
b. Explain key generation for simplified DES. (06 Marks)
c. Mention advantages and disadvantages of cipher Feedback mode. (04 Marks)
- 3 a. Perform encryption and decryption using RSA algorithm for $p = 7$; $q = 11$, $e = 17$; $M = 8$. (08 Marks)
b. Explain Diffie – Hellman key exchange between user A and B using elliptic curves. (08 Marks)
c. What are the properties of Hash functions? (04 Marks)
- 4 a. What are the properties and requirement for a digital signature? (06 Marks)
b. Explain the two approach to digital signature standard. (09 Marks)
c. Describe the common weakness/threat of a Direct Digital Signature Scheme. (05 Marks)

PART – B

- 5 a. Mention the different types of threats, consequences and countermeasures when using web. (08 Marks)
b. Explain the SSL record protocol operation. (06 Marks)
c. With the help of the block diagram, explain cardholder sends purchase request operation. (06 Marks)
- 6 a. Write the techniques used for learning passwords. (08 Marks)
b. Draw the architecture for distributed intrusion detection and explain it. (12 Marks)
- 7 a. Explain the nature of viruses and phases. (08 Marks)
b. Explain antivirus approach and its four generation. (08 Marks)
c. What is network worm and mention few examples. (04 Marks)
- 8 a. What are capabilities and limitations of firewall? (10 Marks)
b. What are the design goals for a firewall and also mention techniques that firewalls used to control access and enforce the sites security policy. (10 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.