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10EC832

Eighth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Network Security

Time: 3 hrs. Max. Marks:100

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

PART – A

1 a. Distinguish between passive and active security attacks. Explain various types of passive and active attacks in brief. **(10 Marks)**

b. Draw the model for network security. Explain its function along with the basic tasks in designing a security service. **(10 Marks)**

2 a. Encrypt the plain text "HELLO" using play fair Cipher technique. Given key = EXAM. **(06 Marks)**

b. With an illustrative example, explain one time pad. **(06 Marks)**

c. Encrypt and decrypt the message 'HI' using Hill Cipher. Given that, $K = \begin{pmatrix} 3 & 7 \\ 15 & 12 \end{pmatrix}$ and $K^{-1} = \begin{pmatrix} 10 & 5 \\ 7 & 9 \end{pmatrix}$. **(08 Marks)**

3 a. With neat diagram, explain single round of DES encryption algorithm. **(08 Marks)**

b. Explain the concept of public key cryptography with neat sketch. **(06 Marks)**

c. Describe the RSA algorithm with an example. **(06 Marks)**

4 a. With an illustrative example, explain Diffie-Hellman key exchange algorithm. **(10 Marks)**

b. What is a digital signature? What are its requirements? Explain direct digital signature and arbitrated digital signature. **(10 Marks)**

PART – B

5 a. Describe Secure Socket Layer (SSL) protocol stack with a neat sketch and define the different parameters used in session and connection states. **(10 Marks)**

b. Describe the sequence of events that are needed for a transaction in SET. **(10 Marks)**

6 a. Describe briefly three classes of intruder. **(06 Marks)**

b. What is intrusion detection? Explain the architecture of distributed intrusion detection in detail. **(08 Marks)**

c. Briefly describe password selection strategies. **(06 Marks)**

7 a. Give the taxonomy of malicious programs. What are the various software threats? Explain. **(10 Marks)**

b. What is DDOS? Describe the 3 lines of defence against DDOS attacks. **(10 Marks)**

8 a. With neat diagram, explain digital immune system. **(10 Marks)**

b. What is a firewall? Describe various types of firewall configurations. **(10 Marks)**

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