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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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24 JAN 2020

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.

