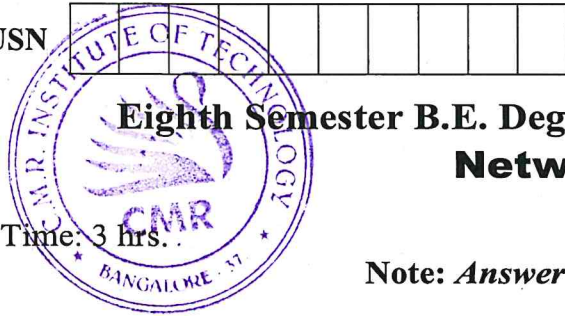


USN

10EC832



Eighth Semester B.E. Degree Examination, July/August 2021
Network Security

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

1. a. Explain the model of network security with neat diagram. List four basic tasks of designing security model. (08 Marks)
 b. Define and classify attacks. (06 Marks)
 c. Encrypt the message "Cryptography". Using play fair cipher with key "MONARCHY". (06 Marks)
2. a. Encrypt the plaintext "COMPUTER" using Hill cipher technique key

$$K = \begin{bmatrix} 9 & 4 \\ 5 & 7 \end{bmatrix}$$
 [Hint: a = 0, b = 1, z = 25]. (08 Marks)
 b. With neat diagram, explain single Round DES encryption. (08 Marks)
 c. Explain counter mode of operation. Mention its advantages. (04 Marks)
3. a. What requirements must a public key cryptosystem fulfill to be a secure algorithm? (06 Marks)
 b. Explain different techniques proposed for distribution of public keys. (08 Marks)
 c. Discuss Diffie Hellman key exchange algorithm. (06 Marks)
4. a. Describe the requirements for a Hash function. (06 Marks)
 b. With diagrams, explain two approaches of digital signatures. (06 Marks)
 c. Write digital signature algorithm, explain the signing and verifying function of digital signature algorithm. (08 Marks)
5. a. Explain various phases of SSL handshake protocol. (10 Marks)
 b. Discuss the sequence of events that are required for a transaction of SET. (10 Marks)
6. a. Briefly explain Three Classes of Intruders. (06 Marks)
 b. Explain Unix Password Scheme with neat diagrams. (06 Marks)
 c. Explain password selection strategies in detail. (08 Marks)
7. a. Explain various phases of a virus. (04 Marks)
 b. Write a note on :
 i) Zombie
 ii) Logic Bomb. (06 Marks)
 c. Explain the following advanced antivirus techniques
 i) Digital Immune system
 ii) Behaviour blocking software (10 Marks)
8. a. Explain the various types of firewall configuration with relevant diagram. (10 Marks)
 b. Discuss the concept of reference monitor with diagram. Explain rules of multilevel security and security rules of reference monitor. (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.