Sr. No. of Question Paper : 857   **E**   **Your Roll No**...............

Unique Paper Code   : 234603

Name of the Course   : **B.Sc. (H) Computer Science**

Name of the Paper   : Information Security (CSHT–615)

Semester   : VI

Duration : 3 Hours   Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Attempt **all** questions from **Section A**.

3. Attempt any **four** questions from **Section B**.

SECTION A

1. (a) Differentiate between Authentication and Authorisation. (2)

    (b) Explain encryption and decryption of Vernam cipher with suitable example. (4)

    (c) What is a Firewall ? Give the names of the types of Firewall. (4)

    (d) Explain the ways in which operating system can support separation and Sharing. (5)

    (e) With the help of block diagram, explain cycles of permutation and substitution in DES scheme. (5)

    (f) Give the security requirements of a database system. (5)

    (g) Compare link encryption and end-to-end encryption. (5)

    (h) Describe the terms copyright, piracy and patents. Also distinguish between patents and copyrights. (5)

SECTION B

2. (a) What is Buffer Overflow attack ? Explain with suitable examples.   (5)

   (b) How a Fence Register can provide protection in an operating system ?

                                                                               (5)

3. (a) What is the step to quickly test a piece of ciphertext to find out whether it was a result of simple transposition or substitution ?   (2)

   (b) Describe covert channel. List any two covert channels.   (3)

   (c) What is the difference between passive and active security attacks ? Explain by giving suitable examples.   (5)

4. (a) Describe various factors that should be considered while developing a security plan.   (5)

   (b) Explain the different types of intrusion detection systems.   (5)

5. (a) Explain various techniques of Viruses gaining control over a program with the help of suitable diagrams.   (5)

   (b) With the help of an example, explain the SQL injection attack and defence from this attack.   (5)

6. (a) What are the properties of cryptographic hash function ? Name any two hash functions.   (5)

   (b) Explain the steps of Diffie-Hellman Key exchange protocol. What is the most common attack on this protocol ?   (5)

7. (a) Who are Computer Criminals ? Give examples.   (2)

   (b) Differentiate between law and ethics.   (3)

   (c) Write short note on Eavesdropping and Wiretapping.   (5)