Eighth Semester B.E. Degree Examination, Feb./Mar. 2022
Network Security

Time: 3 hrs.   Max. Marks:100

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

PART – A

1   a.   What are security attacks, security mechanisms and security services? Briefly explain.
         (06 Marks)
    b.   Explain Active and Passive attacks with their categories.   **(08 Marks)**
    c.   Encrypt the message "Network Security" using key 5 3 1 4 2 6 using double transposition technique.   **(06 Marks)**

2   a.   Encrypt and decrypt the message "FRIDAY" using Hill cipher given $K = \begin{bmatrix} 7 & 8 \\ 19 & 3 \end{bmatrix}$ **(10 Marks)**
    b.   With a neat diagram, explain single round of DES encryption.   **(10 Marks)**

3   a.   Write RSA algorithm perform encryption and decryption using RSA given p = 5, q = 11, e = 3, M = 9.   **(10 Marks)**
    b.   Explain Deffie-Hellman key exchange algorithm. Find shared key and public keys of 2 users A and B if q = 11, α = 5, X_A = 3 and X_B = 2.   **(04 Marks)**
    c.   Explain public key authority technique for public key distribution.   **(06 Marks)**

4   a.   With neat diagram, discuss the basic uses of hash function.   **(12 Marks)**
    b.   Write the Digital Signature Algorithm (DSA). Explain signing and verification functions.
         (08 Marks)

PART – B

5   a.   Explain SSL (Secure Socket Layer) with its important concepts and parameters. **(10 Marks)**
    b.   Describe the sequence of events that are required for a transaction is Secured Electronic Transaction (SET).   **(10 Marks)**

6   a.   Explain Distributed intrusion detection.   **(10 Marks)**
    b.   With neat diagram explain UNIX password scheme.   **(10 Marks)**

7   a.   Give the taxonomy of malicious programs. Explain.   **(08 Marks)**
    b.   List and explain the phases that virus goes through during its life time. **(08 Marks)**
    c.   Write a note on Macro viruses.   **(04 Marks)**

8   a.   Give the capabilities and limitations of firewalls.   **(08 Marks)**
    b.   Explain the different types of firewalls with neat sketch.   **(12 Marks)**

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