

USN

10EC832

**Eighth Semester B.E. Degree Examination, July/August 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. Explain X·800 security mechanisms, in detail. (10 Marks)
  - b. Differentiate between active and passive attacks. (04 Marks)
  - c. In S –DES, 10 bit key is 1011010011 find the sub keys  $k_1$  and  $k_2$  if :  
 $P_{10} = 35274101986$  ;  $P_8 = 637485109$ . (06 Marks)
- 2
  - a. Explain with neat block diagrams a single round of DES encryption. (10 Marks)
  - b. Given the cipher text “E M Q Y”. Find the plain text using the key  $\begin{pmatrix} 1 & 1 \\ 3 & 2 \end{pmatrix}$  in Hill cipher. (07 Marks)
  - c. Write three differences between Conventional cryptosystems and Public key crypto systems. (03 Marks)
- 3
  - a. Explain the RSA algorithm. In a RSA algorithm system it is given that  $p = 7$ ,  $q = 11$ ,  $e = 17$  and  $M = 8$ . Find the cipher text “c” and decrypt “c” to set plain text M. (10 Marks)
  - b. Describe the requirements for a Hash function. (05 Marks)
  - c. Explain Diffie Hellman key exchange algorithm with example. (05 Marks)
- 4
  - a. What is a Digital Signature? List the properties and requirements of Digital Signature? (10 Marks)
  - b. Discuss the various approaches of One – Way Authentication Protocol. (10 Marks)

**PART – B**

- 5
  - a. Show the SSL record protocol operation and the details of SSL record format with diagram and explain. (08 Marks)
  - b. Who are the participants of SET? Give the sequence of events required for SET. Explain with appropriate diagram. (12 Marks)
- 6
  - a. Briefly describe the three classes of Intruder. (06 Marks)
  - b. Explain approaches to Intrusion Detection system. (04 Marks)
  - c. Give a detailed account on UNIX password management. (10 Marks)
- 7
  - a. Write short notes on Trojan horses. (05 Marks)
  - b. Explain the various phases that a virus undergoes during its life time. (05 Marks)
  - c. Discuss the two most important Advanced Antivirus techniques (10 Marks)
- 8
  - a. What are the characteristics of a Bastion host? (10 Marks)
  - b. Explain with a diagram the application level gateway. (10 Marks)