OR

(b) Explain the importance of the DES algorithm. Draw the diagram of round key generation process in S-DES algorithm from the 10 bit key. Also explain the steps involved with a suitable example. (CO2)

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TCS–619

B. TECH. (CSE) (SIXTH SEMESTER)

MID SEMESTER

EXAMINATION, April, 2023

NETWORK SYSTEM SECURITY

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any ***one*** of the sub-questions.

(ii) Each sub-question carries 10 marks.

1. (a) State about the various security attacks stated in X.800 security architecture. Also write about the security services and mechanisms used to implement security in any organization. (CO1)

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OR

(b) Explain how one security services are implemented using one and more security mechanism ? Describe the relationship between security services and security mechanism. (CO1)

2. (a) What do you mean security attack in cyber security ? Explain about the various attacks related to Confidentiality, Integrity and Availability. (CO1)

OR

(b) What do you mean by Network Security Model ? Write about the various components of the Network Security Models. (CO1)

3. (a) State the difference between Confidentiality and Authentication. Explain with block diagram how Public key encryption offers both confidentiality and authentication. (CO2)

OR

(b) Explain with the help of suitable diagram the key generation process of S-DES cipher. Calculate the values of K1 and K2 using the value of K = 1010101111. Given the values of P10 = {3, 5, 2, 7, 4, 10, 1, 9, 8, 6} and P8 = {6, 3, 7, 4, 8, 5, 10, 9} (CO2)

4. (a) Find out the value of public key and private key using RSA ALGORITHM given that p = 7 and q = 5. Also show the encryption and decryption calculation using the value of Plain Text M = 4. (CO2)

OR

(b) Explain about double DES and Triple DES with suitable block diagrams and the keys used. (CO2)

5. (a) Explain in details with suitable block diagram about a Modern Block Symmetric Cipher. (CO2)