Question Paper

Exam Date & Time: 09-Jan-2023 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal School of Information Sciences (MSIS), Manipal
Third Semester M.Sc.(Information Science) Degree Examination - January 2023

Computer and Information Security [MIS 607]

Marks: 100 **Duration: 180 mins.**

Monday, January 9,2023

Answer all the questions.

1) 1.Define the following: (10)
a. Vulnerability
b. Threat
c. Attack
d. Cipher text
[4X2.5=10 Marks]

2) 2.a. Encrypt the message "I like to do cryptanalysis" using Rail fence (10)
b.Decipher TOTBA AUJAA KMHKO ANTAU FKEEE LTTYR SRLHJ RDMHO ETEII which was enciphered using a 4 column transposition.
[3+7=10 Marks]

3) 3.Distinguish between Symmetric and asymmetric key cryptography with their pros and cons. (10)
[1X10=10 Marks]

4) 4. Use the following S-Table for simplified DES to compute the values. The input for s box is given below (10)

S_0	0	1	2	3
0	1	0	3	2
1	3	2	1	0
2	0	2	1	3
3	3	1	3	2

a. find the output 0110 and 0101
b.Explain the key generation of DES algorithm [3+7 =10 Marks]

5) 5.Akash needs to pick a public and private RSA key to communicate with Bandy. (10)

a. Akash selects p=11 and q=3. What is 'n' and 'm'?
b. Akash selects e=3. Compute the value of d. Check whether Akash selected the value "e" correctly. Justify.
c. List Akash's Public and Private Key.
d. Bandy wants to send the message "7" such that it only can be read by Akash. Compute the cipher text he should send to Akash. [2+4+2+2 =10 Marks]

6) 6. Define the term Hashing. Explain the applications of hashing in detail.[1X10=10 Marks] (10)

7) 7. Explain any five Authentication techniques. (10)

[1X10=10 Marks]

8)	8. Define the term covert channel. Explain the properties of covert channel. List the types of covert channel.[1X10=10 Marks]	(10)
9)	9. Define the term Egress filter. Explain stateless based Firewall in detail. List out the possible attacks on it.[1X10=10 Marks]	(10)
10)	10. What is DRM? What is the importance of DRM. Explain any two techniques used to protect DRM.[1X10=10 Marks]	(10)

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