Reg. No.										

MANIPAL ACADEMY OF HIGHER EDUCATION, MANIPAL
MANIPAL SCHOOL OF INFORMATION SCIENCES, MANIPAL

THIRD SEMESTER MASTER OF SCIENCE – M.Sc. (INFORMATION SCIENCE)
DEGREE EXAMINATION – NOVEMBER 2021

SUBJECT: MIS 607 – COMPUTER INFORMATION SECURITY

Friday, November 26, 2021

Time: 10.00 – 13.00 Hrs. Max.Marks:100

All questions carry 10 marks each

1. Define the following terminologies and provide the solutions to overcome the attack on those.

   a. Data confidentiality
   b. Data integrity
   c. Availability
   d. Non- Repudiation

   (4x2.5=10 Marks)

2. Decrypt the cipher text message LPDPH LVDZL FRQTX HUHG, which has been encrypted using Caesar Cipher. Explain the different methods to cryptanlaysis the Casear Cipher.

   (3+7=10 Marks)

3. a. Compare Strong collision with Weak collision
   b. Explain Block cipher with an example

   (3+7=10 Marks)

4. a. Use the following S-Table for DES to compute the values. The input for S box is given below find the output for 011011 and 110011

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	14	04	13	01	02	15	11	08	03	10	06	12	05	09	00	07
1	00	15	07	04	14	02	13	10	03	06	12	11	09	05	03	08
2	04	01	14	08	13	06	02	11	15	12	09	07	03	10	05	00
3	15	12	08	02	04	09	01	07	05	11	03	14	10	00	06	13

b. Explain Tiger Hash

(3+7 =10 Marks)

5. Alice planned to encrypt message "1001001111001011 10" using Knapsack Cryptosystem X = (1,2,4,10,20,40), multiplier = 31, modulo= 110, show the decryption steps.

(10 Marks)

6. Explain the usage of hash function in password storage and File integrity.

(10 Marks)

7. Explain the terms
   a. DDoS attack
   b. Virus
   c. Logic Bomb
   d. Jackware

(4x2.5=10 Marks)

8. a. Explain five factor authentication
   b. Explain confused deputy scenario and way to overcome the issue

(5x2= 10 Marks)

9. What is the importance of securing a database? Explain the techniques to overcome inference from database with an example.

(10 Marks)

10. What is Multilevel Security Model. Compare BLP model with Biba Model.

(10 Marks)

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