Question Paper

MANIPAL UNIVERSITY

SCHOOL OF INFORMATION SCIENCES
THIRD SEMESTER MASTER OF SCIENCE - M.Sc. (INFORMATION SCIENCE)
DEGREE EXAMINATION- NOVEMBER 2017
DATE : Thursday, November 16, 2017
Time : 10:00AM - 1:00PM

Computer and Information Security [MIS 607]

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

Answer all the questions.

1) Define the terms (10)

a. Non-repudiation b. Vulnerabilities

c. Masquerading

d. Integrity e. Confidentiality

[5X2=10 Marks]

2) a. Compare Symmetric key with asymmetric cryptography with their pros and cons (10)

b. Explain how to encrypt and decrypt the message using Ceaser cipher and Double transposition with an example.

[2X5=10 Marks]

3) Solve the problem using Knapsack cryptosystem the Super increasing Knapsack (10)

S={3,5,15,25,54,110,225}

a. Find the public keys , given modulo = 439 , multiplier = 10.

b. Encrypt the plain text 1101010

[5+5=10 Marks]

4) Explain the properties of Hashing. List the applications of it. What is the difference between cryptographic hashing and non-cryptographic hashing [4+2+4= 10 Marks] (10)

5) With respect Data Encryption algorithm answer the following (10)

a. Find out the inverse permutation for the table given below.

IP

2	6	3	1	4	8	5	7

b. Key generation

c. Limitations

[3+ 5 + 2

= 10 Marks]

6) What is Authorization? Compare ACL and Capabilities. Illustrate with necessary diagrams. (10)

[2+6+2=10 Marks]

7) What is Inference? Give example for the Inference. Explain the techniques used to mitigate the inference (10)

[2+3+5 = 10 Marks]

8) Define the term Intrusion detection system. Give examples for True positive, False Positive with respect to IDS. Explain the pros and cons of Signature based and Anomaly based IDS. (10)

[2+4+4 =10 Marks]

9) Write short notes on a. Salami attacks b. time bomb attack (10)
[5X2=10 Marks]

10) Explain Operating system security function in detail. [1X10=10 Marks] (10)

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