

# Question Paper

Exam Date & Time: 12-Feb-2021 (10:00 AM - 01:15 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

MANIPAL SCHOOL OF INFORMATION SCIENCES, MANIPAL  
FIRST SEMESTER MASTER OF ENGINEERING - ME (INTERNET OF THINGS) DEGREE EXAMINATION - FEBRUARY  
2021

IoT Security [IOT-603]

Marks: 100

Duration: 180 mins.

FRIDAY, FEBRUARY 12, 2021

Answer all the questions.

- 1) Explain two significant attacks (threat actions) that will affect each of the following (10)
  - Confidentiality
  - Integrity
  - Availability (TLO 2.1 and 1.2) [1X10=10 Marks]
- 2) a. Encrypt the message "Network and information security is my favorite subject" using double transposition with the key1 "sois" and key2 "manipal" (10)  
b. Decrypt using ceaser cipher "lalnhdqldso" [7+ 3 =10 Marks] (TLO 2.1)
- 3) Compare and contrast symmetric encryption and asymmetric encryption with respect to the following: (10)
  - a. Number of keys
  - b. Protection of key
  - c. Best uses
  - d. Key distribution
  - e. Speed[1X10=10 Marks]  
(TLO 2.1)
- 4) Given Super increasing knapsack {2,3,6,13,27,52}, with  $n=31$  and  $m=105$  (10)  
Find the general knapsack.  
Encrypt the message: 110101  
Decrypt the above result [3 + 2 + 5 = 10 Marks] (TLO 2.1)
- 5) Alice want to send message to Bob, her need non-repudiation and integrity which method/ algorithm you will recommend? Justify the reason. Explain the steps involved in the algorithm(L4) (TLO 2.2) [1X10=10 Marks] (10)
- 6) Explain the Mitigating techniques in IoT Privacy Concerns. [1X10=10 Marks] (TLO 3.1) (10)
- 7) Define the term (10)  
  
SQL injection  
Cross site scripting attack  
Rabbit  
Trojan Horse [2X5=10 Marks] (TLO 4.1)
- 8) Define the term Crypto currencies. Differentiate between cold wallet and hot wallet [1X10=10 Marks] (TLO 3.1) (10)
- 9) Explain Wormhole attack and Man-in-Middle Attack(TLO 3.1) [1X10=10 Marks] (10)

- 10) Compare and Contrast Anomaly based Intrusion Detection System and Signature based Intrusion Detection System. [1X10=10 Marks] (TLO 6.1) (10)

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