

Roll No



**PRESIDENCY UNIVERSITY
BENGALURU**

**SCHOOL OF ENGINEERING
MID TERM EXAMINATION - APR 2023**

Semester : Semester VI - 2020

Course Code : CSE2040

Course Name : Sem VI - CSE2040 - Cyber Threats for IOT and Cloud

Program : CCS

Date : 13-APR-2023

Time : 11:30AM - 1:00PM

Max Marks : 60

Weightage : 30%

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.
- (iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS

(10 X 2 = 20M)

1. 6LOWPAN stands for_____.
(CO1) [Knowledge]
2. MQTT Stands for_____.
(CO1) [Knowledge]
3. Which of the following is not a fundamental component of an IoT system?
 - a) Sensors
 - b) Connectivity and data processing
 - c) User interface
 - d) Transformer
(CO1) [Knowledge]
4. State the meaning of 3-way handshake with respect to a protocol.
(CO1) [Knowledge]
5. What do you mean by virtualization ?
(CO1) [Knowledge]
6. Differentiate between Symmetric and Asymmetric key Cryptography.
(CO1) [Knowledge]
7. Write a short note on Zig-Bee protocol
(CO1) [Knowledge]
8. List any four security services offered by OSI security architecture.
(CO1) [Knowledge]

9. Which of the following statement(s) is/are correct?

- a) Different types of cloud computing service models provide different levels of security services.
- b) Adapting your on-premises systems to a cloud model requires that you determine what security mechanisms are required and mapping those to controls that exist in your chosen cloud service provider.
- c) Data should be transferred and stored in an encrypted format for security purpose.
- d) All the above

(CO1) [Knowledge]

10. What is the major difference between DoS and DDoS attack?

(CO1) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS

(4 X 5 = 20M)

11. Any IoT environment should consists of some major components to work smoothly. List and briefly explain any five such components

(CO1) [Comprehension]

12. Explain any five advantages and disadvantages of Internet of Things

(CO2) [Comprehension]

13. The cloud applications in the present technological era are divides into 3 different models. List and explain all these 3 models with an example each.

(CO1) [Comprehension]

14. What are the challenges of using Cloud Computing Services? Explain any four challenges by taking your own example.

(CO2) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS

(2 X 10 = 20M)

15. Given two case studies below.

Case 1: A server is used by several sites to interpret the address to a recognizable title: google.com. A DNS server, or DNS, is the server that transforms 192.156.65.118 to google.com.

Case 2: These target network layer or transport layer protocols using flaws in the protocols to overwhelm targeted resources. A SYN flood can sends the target IP addresses a high volume of "initial connection request" packets using spoofed source IP addresses.

Give justification for the following questions

- (a). Which attacks are depicted in both the cases?
- (b). How these attacks are experienced in real time Networking scenarios?
- (c). How can you prevent these attacks? Justify with a draft diagram

(CO2) [Application]

16. Take an example of Home Automation System which uses both IoT and Cloud Computing platforms for its operations. Perform the following tasks

- (a). Draw the preferable architecture diagram for thr given scenario
- (b). What are the protocols can be used for any two communications in the given scenario. Justify
- (c). What could be the possible threat in this scenario. Explain.

(CO2) [Application]