| Roll No. | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

# PRESIDENCY UNIVERSITY

## BENGALURU

**End - Term Examinations – MAY 2025**

**Date:** 26-05-2025 **Time:** 01:00 pm – 04:00 pm

| | | |
|---|---|---|
| **School:** SOIS | **Program:** BCD | |
| **Course Code:** CSA3073 | **Course Name:** Data Security and Privacy | |
| **Semester**: IV | **Max Marks**: 100 | **Weightage**: 50% |

| CO - Levels | CO1 | CO2 | CO3 | CO4 | CO5 |
|---|---|---|---|---|---|
| Marks | 24 | 24 | 26 | 26 | - |

**Instructions:**

*(i) Read all questions carefully and answer accordingly.*

*(ii) Do not write anything on the question paper other than roll number.*

## Part A

**Answer ALL the Questions. Each question carries 2marks.** **10Q x 2M=20M**

| | | | | |
|---|---|---|---|---|
| **1.** | List out the types of security. | **2 Marks** | **L1** | **CO1** |
| **2.** | Define accountability. | **2 Marks** | **L1** | **CO1** |
| **3.** | Differentiate Confidentiality vs integrity. | **2 Marks** | **L1** | **CO2** |
| **4.** | What is remote access control? | **2 Marks** | **L1** | **CO2** |
| **5.** | Distinguish between symmetric and asymmetric encryption | **2 Marks** | **L1** | **CO3** |
| **6.** | Why Does Hadoop Need Kerberos? | **2 Marks** | **L1** | **CO3** |
| **7.** | What is the role of a Key Distribution Center (KDC)? | **2 Marks** | **L1** | **CO3** |
| **8.** | What is data destruction and data deletion? | **2 Marks** | **L1** | **CO4** |
| **9.** | What does AAA define in the context of data protection? | **2 Marks** | **L1** | **CO4** |
| **10.** | What is SSL/TLS handshake? | **2 Marks** | **L1** | **CO4** |

## Part B

**Answer the Questions.** **Total Marks 80M**

| | | | | | |
|---|---|---|---|---|---|
| **11.** | **a.** | i. How do passive attacks differ from active attacks?<br>ii. What are the key ethical principles in data security and privacy? | **20 Marks** | **L2** | **CO1** |
| | | **Or** | | | |
| **12.** | **a.** | i. What are the key principles of organizational security for data protection?<br>ii. What are the key security challenges in a distributed system? | **20 Marks** | **L2** | **CO1** |
| **13.** | **a.** | Discuss the limitations of traditional password-based authentication and explain how Multi-Factor Authentication (MFA) addresses these vulnerabilities. | **20 Marks** | **L3** | **CO2** |
| | | **Or** | | | |
| **14.** | **a.** | Describe the concept of IDS and IPS with neat diagram. Additionally, evaluate the challenges in deploying and maintaining IDS/IPS in large-scale enterprise environments, and propose best practices for their effective implementation. | **20 Marks** | **L2** | **CO2** |
| **15.** | **a.** | Explain how Kerberos ensures mutual authentication between clients and servers, and why this is crucial for secure communications. | **20 Marks** | **L2** | **CO3** |
| | | **Or** | | | |
| **16.** | **a.** | What is the purpose of authentication in security systems? Describe different types of authentication tokens and their respective purposes. | **20 Marks** | **L2** | **CO3** |
| **17.** | **a.** | How does TLS differ from Kerberos in terms of securing network communication, and what role does TLS play in protecting data transmitted over the internet? List out the steps in generating new certificate. | **20 Marks** | **L3** | **CO4** |
| | | **Or** | | | |
| **18.** | **a.** | Why is key management crucial in encryption systems, and what are the challenges associated with managing cryptographic keys? What is the SSL/TLS handshake, and how does it establish a secure communication channel between two parties? | **20 Marks** | **L2** | **CO4** |