

Indian Statistical Institute, Kolkata

Computing Systems Security II

M.Tech CrS – 2024-2026

End Term Examination, 2025

Date: 26/11/2025

Full Marks: 50

Time: 3 hrs

1. Differentiate between GSM and CDMA network with respect to their Security Features? 4
2. Name the key components of a Cellular Network along with their basic functions. 4
3. Define Handoff process in a Cellular Network. Name three different types of handoffs along with their one or two lines description? 4
4. Explain Android Security Architecture and also describe core security features of Android? 5
5. How to Detect and Contain Security Breaches on Android Devices? 5
6. What is SQL Injection? Give a practical example, how SQL injection attack can be launched against a database. 4
7. Define the concept of View in a Database. Explain how view provides an enhanced access control. 2 + 2 = 4
8. How can organizations ensure secure isolation and prevent lateral movement between virtual machines in a shared virtualized environment? 4
9. How can organizations monitor and respond to threats within virtualized environments in real time? 4
10. Suppose, we want to develop a Host based Intrusion Detection system. You are free to choose anyone of Windows or Linux based system. How do you approach developing such a solution – keeping in mind what sort of data you will collect, how do you use those data and what kind of breaches you want to detect. 4 x 1.5 = 6
11. Answer any 6 questions. 6 x 1 = 6

- I. **Which component is responsible for managing and isolating virtual machines on a host system?**
- II. **What is the primary risk associated with a VM escape attack?**
- III. **Which Android feature restricts apps from accessing data of other apps?**
- IV. **What does Google Play Protect primarily do?**
- V. **What are all the valuable information we can get by using `ifconfig` command in Linux?**
- VI. **What is the primary purpose of sandboxing in cybersecurity?**
- VII. **Write in one or two lines how sandboxing can help in Malware analysis?**
- VIII. **Which technique is commonly used to prevent SQL injection attacks in database systems?**