

# Information Security - VIT Semester Exam Question Bank

## Module 1: Information Security Concepts

### 3 Marks Questions:

1. Define CIA triad in Information Security.
2. What is the difference between threats and vulnerabilities?
3. List types of malicious code.

### 5 Marks Questions:

1. Explain confidentiality, integrity, and availability with examples.
2. Discuss different types of malware with suitable examples.
3. What are common countermeasures to prevent malware attacks?

### 10 Marks Questions:

1. Explain the components of computer security including physical and logical security.
2. Describe various threats, their potential harms, and associated vulnerabilities.
3. Discuss program security practices and malware countermeasures in detail.

## Module 2: Authentication and Access Control

### 3 Marks Questions:

1. List the three types of authentication factors.
2. What is role-based access control?
3. Name any two user authentication protocols.

### 5 Marks Questions:

1. Differentiate between RBAC and ABAC with examples.
2. What is the purpose of key management in secure systems?
3. Explain the working of OAuth.

### 10 Marks Questions:

1. Describe hierarchical key management and its advantages.
2. Explain the working of Kerberos and SAML authentication protocols.
3. Discuss physical access control mechanisms used in secure environments.

## Module 3: Operating Systems Security

### 3 Marks Questions:

1. Define the role of the reference monitor in OS security.

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2. What are rootkits?
3. List security features in trusted operating systems.

### **5 Marks Questions:**

1. Explain different OS design techniques for improving security.
2. What are trusted systems? Give examples.
3. How can rootkit attacks be mitigated?

### **10 Marks Questions:**

1. Discuss layered and kernelized OS design models for enhanced security.
2. Describe the concept and design principles of trusted operating systems.
3. Explain the role of MAC and secure audit logging in OS security.

## **Module 4: Security Countermeasures**

### **3 Marks Questions:**

1. What is a packet-filtering firewall?
2. List types of IDS.
3. Define NAT and its security benefits.

### **5 Marks Questions:**

1. Explain the difference between IDS and IPS.
2. Discuss DLP techniques with examples.
3. Describe types of firewalls and their working principles.

### **10 Marks Questions:**

1. Discuss in detail Intrusion Detection and Prevention Systems (IDPS).
2. Explain firewall architecture and configurations with diagrams.
3. Evaluate the strengths and limitations of various security countermeasures.

## **Module 5: Database Security**

### **3 Marks Questions:**

1. What is data aggregation and inference?
2. Define SQL injection attack.
3. List two ways to secure a database.

### **5 Marks Questions:**

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1. Explain types of data disclosures and how to prevent them.
2. How is sensitive data handled in databases?
3. Describe multilevel database security with examples.

## **10 Marks Questions:**

1. Discuss various database attacks and methods to mitigate them.
2. Explain database security requirements and implementation methods.
3. Analyze inference attacks and mitigation techniques in database systems.

## **Module 6: Web Security**

### **3 Marks Questions:**

1. Define XSS attacks.
2. What is phishing?
3. List types of browser-based attacks.

### **5 Marks Questions:**

1. Explain how fake web content deceives users.
2. Describe protection mechanisms against malicious web pages.
3. How can phishing URLs be detected?

## **10 Marks Questions:**

1. Explain website data vulnerabilities and countermeasures.
2. Discuss spam detection and email-based threats with examples.
3. Explain various web security threats and prevention strategies.

## **Module 7: Privacy Issues**

### **3 Marks Questions:**

1. What is identity theft?
2. Name any two privacy laws.
3. What are computer-related privacy concerns?

### **5 Marks Questions:**

1. Describe GDPR and HIPAA regulations.
2. What are people-based privacy concerns?
3. List actions individuals can take to protect their privacy.

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### **10 Marks Questions:**

1. Discuss privacy principles and government regulations in detail.
2. Explain cryptographic techniques used for privacy preservation.
3. Analyze major threats to personal data privacy and how to mitigate them.