

Roll No.

Total Pages : 03

MCA/M-24

24526

SECURITY IN COMPUTING

MCA-20-25 (iii)

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

1. Write short notes on (any *five*) of the following :
 - (a) What are some fundamental computer security concepts ?
 - (b) What is the difference between malicious and non-malicious code ?
 - (c) What are some common measures to enhance network security ?
 - (d) What is an IDS and how does it contribute to computer security ?
 - (e) What are the key components of the Windows security architecture ?
 - (f) How can intellectual property be safeguarded in the digital realm ?

Unit I

2. What is cryptography and how does it contribute to ensuring the confidentiality and integrity of data ? What are the basic principles and components of cryptographic systems ? What are the key considerations in selecting and using cryptographic algorithms ?
3. What are the key aspects of program security, and how can vulnerabilities in software be exploited by viruses and malicious code ? What are some common techniques used by viruses to propagate and infect systems ? How can organizations and individuals protect their systems from such threats ?

Unit II

4. What are the key components and functionalities of a database management system (DBMS) ? How does a relational DBMS organize and manage data using tables, relationships, and queries ? What are the advantages of using a relational DBMS over other database models, such as hierarchical or network models ?
5. Why is a firewall an essential component of network security infrastructure ? How does a firewall enforce access control policies, monitor and filter network traffic, and prevent potential security breaches ?

Unit III

6. How does the SSL/TLS protocol contribute to the security of data transmission over the internet ? What are the key features and functionalities provided by SSL/TLS ? How does SSL/TLS establish secure communication channels between clients and servers ?
7. What is the Linux security model, and how does it provide a robust framework for securing Linux-based systems ? How does the Linux security model help prevent unauthorized access, privilege escalation, and ensure the integrity of the system ?

Unit IV

8. What are the common physical security threats that organizations face ? How can organizations prevent and mitigate these threats through physical security measures ?
9. What is risk assessment, and why is it crucial for organizations to conduct regular risk assessments ? How can organizations identify and evaluate potential security risks and vulnerabilities, both internal and external that could impact their operations and assets ?