A–0803

Total Pages : 3 **Roll No. .....**

MIT (CS)-104/CEGCS-04

INFORMATION SYSTEM

(MCA/MSCCS/CEGCS)

Examination, June 2025

Time : 2:00 Hrs. Max. Marks : 70

Note* :–** This paper is of Seventy (70) marks divided into Two (02) Sections 'A' and 'B'. Attempt the questions contained in these sections according to the detailed instructions given therein. ***Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

Section–A

Long Answer Type Questions 2×19=38

***Note* :–** Section 'A' contains Five (05) Long-answer type questions of Nineteen (19) marks each. Learners are required to answer any *two* (02) questions only.

1. Explain the OSI Model and Its significance in Networking. Illustrate how data is transmitted through the OSI Layers with an Example.

2. Describe Static and Variable-Length Subnetting. Provide an example to explain how subnetting is applied in Network Design.

3. What are Digital Certificates ? Discuss the types of Digital Certificates and their role in securing communications.

4. Explain the CIA triad in Cybersecurity. Discuss its importance and provide examples of how it is applied in Penetration Testing.

5. Discuss the phases of Penetration Testing and Explain why reconnaissance and foot-printing are critical steps in this process.

Section–B

Short Answer Type Questions 4×8=32

***Note* :–** Section 'B' contains Eight (08) Short-answer type questions of Eight (08) marks each. Learners are required to answer any *four* (04) questions only.

1. What is CIDR and how does it differ from traditional IP addressing methods ?

2. Explain the importance of Private Internets and Classless Inter-Domain Routing (CIDR) in Network Design.

3. Outline the main steps involved in an FTP Session and Describe the basic commands used.

4. What is the role of a Certificate Authority (CA) in Public Key Infrastructure (PKI) ?

5. Discuss the concept of VLAN hopping and How it can be prevented in a Secure Network.

6. Explain Buffer Overflow Vulnerabilities and their impact on application security.

7. Discuss the role of SSH (Secure Shell) in Network Security. How does it differ from SSL/TLS ?

8. What is Key Management and Why is it crucial for Cryptographic Systems ?

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