

Reg.No.:																			
----------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN  
 [AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]  
 Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

**Question Paper Code: 50013**

M.E. / M.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2025

Third Semester

Computer Science and Engineering

P23CSE19 – INFORMATION SECURITY

(Regulation 2023)

Time: Three Hours

Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Identify two primary differences between a Threat and an Attack in terms of intent and impact.	2	K1	CO1
2.	Briefly demonstrate the significance of CIA (Confidentiality, Integrity and Availability) triad in Information Security.	2	K2	CO1
3.	Differentiate between the functions of digital signatures and digital certificates in ensuring Information Security.	2	K2	CO2
4.	Mention two key differences between symmetric key cryptography and asymmetric key cryptography.	2	K2	CO2
5.	Define Virus and classify the different types of Viruses.	2	K2	CO3
6.	Explain how an Intruder Detection System (IDS) contributes to Information Security.	2	K2	CO3
7.	Briefly explain the role of Digital Forensic in Information Security.	2	K2	CO4
8.	Explain in detail the significance of Operating System (OS) fingerprinting in information security, describing how it is performed, the techniques used (active and passive methods), and its importance for both attackers and security professionals in vulnerability assessment and network defense.	2	K2	CO4
9.	Explain the key advantages of preserving the Availability.	2	K2	CO5
10.	List the security issues of Web Application.	2	K1	CO5

PART – B

(5 x 13 = 65 Marks)

Q. No.	Questions	Marks	KL	CO
11. a)	Explain the significance of Program Analysis in Information Security.	13	K2	CO1
	(OR)			
b)	What is software vulnerability? How can it impact software security and what examples demonstrate its exploitation in cyber attacks?	13	K2	CO1
12. a)	What are the distinct steps involved in Digital Certificate generation procedure, and can you illustrate them with a clear diagram.	13	K2	CO2
	(OR)			
b)	Explain the importance of digital Authentication in Information Security, and list the different types of digital Authentication methods with example.	13	K2	CO2
13. a)	Explain in detail the objectives and requirements of email security, describing how organizations implement protective measures to safeguard communications, prevent unauthorized access, and ensure data confidentiality in email systems.	13	K2	CO3
	(OR)			
b)	What are Sniffing and IP Spoofing attacks, and what countermeasures are essential to safeguard network and information security.	13	K2	CO3
14. a)	Explain in detail the concept of social engineering in information security, including how such attacks are carried out and the possible consequences they can have on individuals and organizations.	13	K2	CO4
	(OR)			
b)	Outline the objectives of masking a TCP/IP stack in Information Security, and how does it protect against reconnaissance and protocol based attacks.	13	K2	CO4
15. a)	Explain the significance of user privacy and anonymity in Information Security and describe the key cryptographic techniques used to protect them.	13	K3	CO5
	(OR)			
b)	What Cryptographic techniques are crucial for securing web applications, and how do they function in ensuring security.	13	K3	CO5

PART – C

(1 x 15 = 15 Marks)

Q. No.	Questions	Marks	KL	CO
16. a)	Explain the procedures of Digital Signature Generation and Verification and illustrate these processes with a clear diagram.	15	K3	CO2
	(OR)			
b)	Explain the necessity of Firewall in ensuring Information Security and describe its fundamental features.	15	K2	CO3

---