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: 50051

M.E. / M.Tech. DEGREE END-SEMESTER EXAMINATIONS – JAN. / FEB. 2026
First Semester
Computer Science and Engineering
P23CSE27 – SECURITY PRINCIPLES AND PRACTICES
(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.	Differentiate Attack against and Threat.	2	K1	CO1
2.	Define significance of Number Theory in Cryptosystem.	2	K2	CO1
3.	Briefly Substitution cipher with example.	2	K2	CO2
4.	Differentiate between Transposition cipher and Substitution cipher.	2	K2	CO2
5.	Mention the differences between Symmetric and Asymmetric key encryption/decryption.	2	K2	CO3
6.	Define the significance of Hybrid encryption/decryption over the Symmetric and Asymmetric key encryption/decryption.	2	K1	CO3
7.	Distinguish between Cryptography and Cryptology.	2	K1	CO4
8.	Categorize Authentication mechanisms based on factor.	2	K2	CO4
9.	List the ethical issues in Computer Security.	2	K2	CO5
10.	Briefly demonstrate the different types of Computer Crimes.	2	K1	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	State the different types of attacks in Cryptography and the required countermeasures to defend those attacks.	13	K2	CO1

		(OR)			
	b)	Explain the significance of CIA triad and the role of each to maintain the efficiency and security of a communication system.	13	K2	CO1
12.	a)	Illustrate the steps involved in DES algorithm with a neat sketch.	13	K2	CO2
		(OR)			
	b)	Step wise demonstrate the AES algorithm with a neat sketch.	13	K2	CO2
13.	a)	With a neat sketch, step-wise explain the Diffie Hellman Key Exchange protocol to negotiate a contributory session key between two unknown entities.	13	K2	CO3
		(OR)			
	b)	Briefly demonstrate the encryption and decryption in RSA algorithm with a neat sketch.	13	K2	CO3
14.	a)	Illustrate the working mechanisms of the Secure Socket Layer (SSL) in detail with a neat sketch.	13	K2	CO4
		(OR)			
	b)	With a neat sketch explain the working mechanisms of the Kerberos protocol in details.	13	K2	CO4
15.	a)	List the reasons behind the software failure and the required steps to be taken to eradicate software failure of a system.	13	K4	CO5
		(OR)			
	b)	Mention the steps to be taken to maintain good security practice in an organization with an example.	13	K4	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	With a neat sketch, step-wise explain how the Man-in-the-Middle attack is possible in the Diffie Hellman Key Exchange protocol and how it can be avoided.	15	K2	CO3
		(OR)			
	b)	Explain in detail the "Right of Employees and Employers" to maintain good security practices in an organization, with an example.	15	K4	CO5