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

Question Paper Code: 50012

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

Third Semester

Computer Science and Engineering

P23CSE17 – ETHICAL HACKING AND DIGITAL FORENSICS

(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.	Define Ethical Hacking.	2	K1	CO1
2.	What is a Malware attack? Give an example.	2	K1	CO1
3.	Infer the importance of scanning with an example.	2	K2	CO2
4.	Define Banner grabbing.	2	K1	CO2
5.	Express vulnerabilities with an example.	2	K2	CO3
6.	What is an APK file?	2	K1	CO3
7.	Outline the chain of custody.	2	K2	CO4
8.	What is digital evidence? State its significance.	2	K1	CO4
9.	Define email header analysis.	2	K1	CO5
10.	Infer the meaning of phishing email with an example.	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.	Questions	Marks	KL	CO
11. a)	Explain the standard penetration testing lifecycle. Describe each phase with goals and deliverables and how to ensure tests remain within legal and ethical boundaries.	13	K2	CO1

	(OR)			
	b) Illustrate common network attacks. For each, explain how it works, how it can be detected in logs/traffic, potential impacts, and practical mitigation strategies.	13	K2	CO1
12.	a) Outline the different types of network scanning techniques.	13	K2	CO2
	(OR)			
	b) Compare and contrast foot printing, scanning, and enumeration.	13	K2	CO2
13.	a) Assess the mobile app security testing methodology for Android and iOS. Include reconnaissance, static analysis, dynamic analysis, and reporting.	13	K2	CO3
	(OR)			
	b) Explain Cross-Site Scripting (XSS) in depth, types, impact on users and applications, methods to detect and a layered prevention strategy for both server-side and client-side controls.	13	K2	CO3
14.	a) Discuss the legal and ethical challenges faced during digital investigations, particularly in cases involving cross-border data, cloud storage, and personal privacy.	13	K2	CO4
	(OR)			
	b) Explain in detail the steps of the digital forensic process. Discuss why each step is crucial in maintaining admissibility in court.	13	K2	CO4
15.	a) Describe common email crimes such as phishing, spoofing, and spamming. Explain how forensic investigator trace and analyze these activities to maintain admissibility of evidence in court.	13	K2	CO5
	(OR)			
	b) Organize the social media forensics in detail. Discuss evidence sources, collection methods, challenges and the importance of authenticity verification.	13	K2	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.	Questions	Marks	KL	CO
16.	a) During performing an authorized penetration test for an e-commerce web application, create a structured test plan that covers information gathering, authentication testing, business-logic testing, input-validation testing, and reporting.	15	K2	CO3
	(OR)			
	b) Elaborate the challenges and limitations of foot-printing, scanning, and enumeration in real-world environments. Suggest strategies to overcome or ethically handle these limitations.	15	K3	CO2