Register No : _____

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2025

Fifth Semester

Artificial Intelligence and Data Science

CW3551 -Data and Information Security

Regulations - 2021

Duration : 3 Hrs ***Maximum : 100 Marks***

PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

Q.No	*Questions*	*BLT*	*CO*	*Marks*
1.	Assess the importance of a C.I.A triangle.	L2	1	2
2.	Compare Vulnerability and Exposure.	L2	1	2
3.	What is meant by the term “Information Extortion”?	L1	2	2
4.	Name the most common methods of virus transmission.	L1	2	2
5.	Given two integers A=3 and M=11, identify the modular multiplicative inverse of A under modulo M.	L3	3	2
6.	List the requirements that are not satisfied by version 2 of X.509 certificate.	L2	3	2
7.	Mention the IPsec services.	L1	4	2
8.	Define replay attack.	L1	4	2
9.	Compare Passive and Active web security attacks.	L2	5	2
10.	List the ways of classifying web security threats.	L1	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

Q.No			*Questions*	*BLT*	*CO*	*Marks*
11.	a	i	Analyze the critical characteristics of information. How are they used in the study of computer security?	L4	1	8
		ii	Write the six components of an information system. Which are most directly affected by the study of computer security?	L4	1	8
			Or			
	b	i	Illustrate briefly about SDLC waterfall methodology and its relation in respect to information security.	L2	1	8
		ii	Discuss the steps common to both the systems development life cycle and the security systems life cycle.	L2	1	8
12.	a	i	How has the perception of the hacker changed over recent years? Compose the profile of a hacker today?	L2	2	8

		ii	Summarize how does technological obsolescence constitute a threat to information security? How can an organization protect against it?	L2	2	8
			Or			
	b	i	Illustrate the methods does a social engineering hacker use to gain information about a user's login id and password? How would this method differ if it were targeted towards an administrator's assistant versus a data-entry clerk?	L2	2	8
		ii	Explain integrity policies and hybrid policies.	L2	2	8
13.	a		Apply digital signature algorithm for your own example and show how signing and verification is done using DSS.	L3	3	16
			Or			
	b		Provide any one real time case study for the use of X.509 certificate and also depict its format.	L3	3	16
14.	a		Depict how Email message could be sent secured with neat example along with the architecture of IP Security.	L3	4	16
			Or			
	b		Evaluate who decides how and when data in an organization will be used or controlled? Who is responsible for seeing that these wishes are carried out? Frame complete security model with IPsec security and manage keys appropriately.	L3	4	16
15.	a		Describe the SSL architecture in detail and explain how it helps in maintaining secure end to end communication.	L2	5	16
			Or			
	b		Describe the working of secure electronic transaction with neat diagram and elaborate its role in transaction processing.	L2	5	16