CBCS SCHEME

USN

BAD703

Seventh Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026

Data Security and Privacy

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Explain the model for network security with a neat diagram.	10	L2	CO1
	b.	What is Steganography? Describe different methods with examples.	10	L2	CO1
		OR			
Q.2	a.	Explain the play fair cipher encryption and decryption process with an example.	10	L2	CO1
	b.	Discuss various substitution techniques used in classical encryption.	10	L2	CO1
		Module – 2			
Q.3	a.	Explain the principles of public-key cryptosystem with a neat diagram.	10	L2	CO2
	b.	Write a short note on public key cryptanalysis.	6	L2	CO2
	c.	Illustrate the security features of ECC with examples.	4	L2	CO2
		OR			
Q.4	a.	Explain the Diffie-Hellman key exchange algorithm with an example and diagram.	10	L2	CO2
	b.	How does the Man-in-the Middle attack affect Diffie-Hellman? Explain.	6	L2	CO2
	c.	What is the role of a Pseudo Random Number Generator (PRNG) in cryptography?	4	L2	CO2
		Module – 3			
Q.5	a.	Describe key management fundamentals with neat diagram.	10	L2	CO3
	b.	Explain the governing aspects of key management.	10	L2	CO3
		OR			
Q.6	a.	Discuss the key generation, establishment and storage methods.	10	L2	CO3
	b.	Explain the importance of key usage and storage in cryptosystems.	10	L2	CO3

		Module – 4			
Q.7	a.	Explain web security considerations.	8	L2	CO4
	b.	Illustrate the working of Transport Layer Security (TLS).	6	L2	CO4
	c.	What is a Security Parameters Index (SPI) in IP security?	6	L2	CO4
		OR			
Q.8	a.	Describe the IP security overview and the need for IP security policies.	8	L2	CO4
	b.	What is Encapsulating Security Payload (ESP)? Explain its purpose.	6	L2	CO4
	c.	Illustrate the role and phases of Internet Key Exchange (IKE) protocol.	6	L2	CO4
		Module – 5			
Q.9	a.	Discuss various data hiding techniques in text.	10	L2	CO5
	b.	Explain the LSB (Least Significant Bit) encoding technique with a suitable example.	10	L2	CO5
		OR			
Q.10	a.	Explain watermarking and its intuitive and digital methods.	10	L2	CO5
	b.	Illustrate the process of data hiding in text using innocuous text techniques.	10	L2	CO5

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