

TF. sem I C1 scheme summer 2025

Duration: 3 hours

[Max Marks: 80]

5/6/25

INFJ

- N.B.: (1) Question No 1 is Compulsory.
 (2) Attempt any three questions out of the remaining five.
 (3) All questions carry equal marks.
 (4) Assume suitable data, if required and state it clearly.

		Marks
Q.1	a. Explain the CIA triad .	5
	b. Explain the structure and purpose of an X.509 digital certificate.	5
	c. What is the purpose Trojan horse and backdoor.	5
	d. Explain the working of a Virtual Private Network (VPN) and its security benefits.	5
Q.2.	a. Given a 5x5 grid and the keyword "PLAYFAIR", encrypt the message "HIDE" using the Playfair cipher. Demonstrate the steps and the final ciphertext.	10
	b. Explain the working of SHA-256 using suitable example.	10
Q.3.	a. What is a SPAM? Explain different types of SPAMs.	10
	b. What is the significance of IPSec? Explain the different modes of operation in IPSec?	10
Q.4.	a. Explain the various use cases of NAC.	10
	b. Explain the different types of IDS.	10
Q.5.	a. What are the characteristics of a firewall?	10
	b. What are the steps involved in implementing NAC solutions?	10
Q.6.	Write short notes on Any 4	20
	a. HMAC and CMAC	
	b. S/MIME	
	c. RSA Algorithm	
	d. Kerberos	
	e. OSI Security Architecture	
	f. HTTPS	