R22 Regulation *Subject code: 4P6HA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VI Semester Regular Examinations, May 2025

INFORMATION SECURITY

(CSE(DS))

Maximum Marks: 60 Date: 23.06.2025 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A				
All the following questions carry equal marks (10X1M=10 Marks)		Marks	CO	Bloom Tx
1.a)	What are the types of security attacks?	1M	CO1	L1
b)	List various security services.	1M	CO1	L1
c)	Compare block ciphers with stream ciphers.	1M	CO2	L1
d)	What are the principles of public key cryptosystems?	1M	CO2	L1
e)	What properties must a hash function have to be useful for message authentication?	1M	CO3	L1
f)	List three approaches to Message Authentication.	1M	CO3	L1
g)	What is Secure Socket Layer?	1M	CO4	L1
h)	Give the different alert codes of TLS protocol?	1M	CO4	L1
i)	Define Intruder.	1M	CO5	L1
j)	What is password management system?	1M	CO5	L1
Part-B				
Answer All the following questions. (5X10M=50Marks)		Marks	CO	Bloom Tx
2	a) Explain the model of network security. b) What are the advantages of steganography comparing with cryptography?	5M 5M	CO1 CO1	L2 L2
	OR			
3	a) Discuss in detail about various types of Security attacks with neat diagrams. b) Categorize various substitution techniques with suitable examples.	5M 5M	CO1 CO1	L4 L2
4	a) Outline DES algorithm with suitable examples. Discuss its advantages and limitations. b) Demonstrate RSA algorithm with suitable examples.	5M 5M	CO2 CO2	L2 L2
	OR			
5	a) Consider a Diffie- Hellman key with a common prime q=11 and primitive root $\alpha = 2$, If the user has a public key $Ya = 9$ what is A's private key XA b) What is Elliptic Curve Cryptography (ECC)? Discuss ECC algorithm with neat diagram.	5M 5M	CO2 CO2	L4 L2

6	a) Give various Hash Functions. Discuss secure hash algorithm with suitable examples. b) Explain X.509 authentication service.	5M 5M	CO3 CO3	L3 L2
	OR			
7	a) Illustrate the approaches for Digital Signatures based on Public Key Encryption. b) Describe in detail about Kerberos.	5M 5M	CO3 CO3	L2 L3
8	a) Discuss the need of Secure Socket Layer. b) Summarize secure electronic transaction.	5M 5M	CO4 CO4	L3 L2
	OR			
9	a) Explain MIME context types. b) What are the five principal services provided by PGP?	5M 5M	CO4 CO4	L2 L2
10	a) What is Intrusion? Discuss Intrusion detection system with neat diagram b) Discuss Intruders with an example.	5M 5M	CO5 CO5	L2 L2
	OR			
11	Draw the IP security authentication header and explain the functions of each field.	10M	CO5	L4

206