R22 Regulation Subject code: 4E7EB

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VII Semester Supplementary Examinations, May 2026

NETWORK SECURITY AND CRYPTOGRAPHY

(CSE)

Maximum Marks: 60 Date:07.05.2026 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	BTL
1.a)	Differentiate symmetric and asymmetric encryption?	1M	1	2
b)	Define integrity and non repudiation.	1M	1	1
c)	Compare stream cipher with block cipher with example.	1M	2	3
d)	What is avalanche effect?	1M	2	1
e)	What is the role of compression function in hash function?	1M	3	1
f)	What are the properties a digital signature should have?	1M	3	2
g)	Define Security association?	1M	4	1
h)	What is ISAKMP?	1M	4	1
i)	Give SSL record format?	1M	5	3
j)	What are the two security services provided by IPSec?	1M	5	3

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
2	a) Discuss any two Substitution Technique and list their merits and demerits. b) Write short notes on various Security services provided by network security model.	5M 5M	1	3 2
	OR			
3	a) What are the requirements and applications of public key? b) Compare and contrast symmetric key encryption with public key encryption method.	5M 5M	1	3 3
4	Explain in detail the key generation in AES algorithm and its expansion format.	10M	2	2
	OR			
5	a) Explain the generation sub key and S Box from the given 32-bit key by Blowfish. b) Mention the strengths and weakness of DES algorithm.	6M 4M	2	3 3

6	a) Describe MD5 algorithm in detail. b) Compare the Features of SHA-1 and MD5 algorithm.	5M 5M	3	2 3
	OR			
7	a) Describe HMAC algorithm in detail. b) Explain how man in middle attack can be possible in Diffie Hellman algorithm.	5M 5M	3	2 2
8	a) What is ESP? Explain how it is used to provide confidentiality and integrity. b) Write brief note on IP Security	5M 5M	4	2 3
	OR			
9	a) Explain about IKE in detail. b) Explain about various fields in authentication header and how they are used to provide security services.	5M 5M	4	2 3
10	a) Explain Secure Electronic transaction with neat diagram. b) What are the features of SET that provide security?	5M 5M	5	3 2
	OR			
11	a) Describe about SSL/TLS Protocol. b) Write Short notes on S/MIME.	5M 5M	5	2 3