

K. J. Somaiya Institute of Engineering and Information Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

Subject Code: ITC502 Subject Name: **Computer Network Security** Date: **December 05,2022**

Nov – Dec 2022				
B.Tech Program: Information Technology				
Examination: TY Semester: V				
Course Code: ITC502 and Course Name: Computer Network Security				
Duration: 2.5 Hours			Max. Marks: 60	
Instructions:				
(1) All questions are compulsory.				
(2) Draw neat diagrams wherever applicable.				
(3) Assume suitable data, if necessary.				
		Max. Marks	CO	BT level
Q 1	Solve any six questions out of eight	12		
i)	List different Security Mechanisms	2	CO1	U
ii)	Apply Rail fence cipher on below message to find cipher text. Message: do not stop learning	2	CO1	A
iii)	Sketch encryption and decryption diagram for Cipher Feedback (CFB) Mode.	2	CO2	U
iv)	Explain a Substitute byte transformation in AES.	2	CO2	U
v)	Describe Information Theft attack.	2	CO3	U
vi)	Explain the steps involved in SSL required protocol.	2	CO4	U
vii)	List the design goals of firewalls.	2	CO6	U
viii)	Define the principal elements of NAC.	2	CO5	U
Q.2	Solve any four questions out of six.	16		
i)	Discuss with neat diagram RC5 algorithm.	4	CO2	U
ii)	Describe the benefits and services provided by VPN.	4	CO4	U
iii)	Explain various phases of Worm.	4	CO3	U

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iv)	Illustrate OSI Security architecture model with neat diagram	4	CO1	A
v)	Explain implementation of NAC solution.	4	CO5	U
vi)	Explain the types of Intrusion Detection Systems.	4	CO6	U
Q.3	Solve any two questions out of three.	16		
i)	Explain IP Security architecture. Show how ESP works in transport and tunnel mode.	8	CO4	U
ii)	Perform encryption and decryption by applying Vigenere cipher and Multiplicative cipher 1. Vigenere cipher: Message: she is listening. Key: CIPHER 2. Multiplicative cipher Message: beautiful world Key : 7	8	CO1	A
iii)	Explain configuration management and SNMPv3.	8	CO5	U
Q.4	Solve any two questions out of three.	16		
i)	Given modulus $n = 91$ and public key $e = 5$, find the values of p, q , and $\phi(n)$ and d . using RSA. Encrypt $M = 25$, also perform decryption.	8	CO2	A
ii)	Explain in detail phishing, backdoors, rootkits and zombie.	8	CO3	U
iii)	An organization named "ABC" wants to implement IPS for security reasons, compare different configuration of IPS and suggest suitable for organization.	8	CO6	An
