

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

Nov – Dec 2023

(B.Tech) Program: **Information Technology** Scheme I/II/IIB/III: **_II_**

Examination: **TY** Semester: **V**

Course Code: **_ITC502_** and Course Name: **Computer Network Security**

Date of Exam: 30/11/2023

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)	Use the additive cipher with key = 15 to encrypt and decrypt the message "HELLO".	02	CO1	Understand
ii)	Discuss different attacks on Digital signature	02	CO2	Understand
iii)	Discuss Electronic Code Book (ECB) Mode of operation	02	CO2	Understand
iv)	Explain what is meant by malicious software?	02	CO3	Understand
v)	Compare block cipher and stream cipher	02	CO1	Understand
vi)	Discuss Benefits of IPSec	02	CO4	Understand
vii)	Explain Principle Elements of NAC	02	CO5	Understand
viii)	Discuss different Functions of Intrusion Detection System.	02	CO6	Understand
Q.2	Solve any four questions out of six.	16		
i)	Use the Vigenere cipher with keyword "DECEPTIVE" to encipher the message "WE ARE DISCOVERED SAVE YOURSELF".	04	CO1	Apply
ii)	Sketch sample Digital Certificate and explain each field of it	04	CO2	Apply
iii)	Discuss how does the worm grow? How it is different from propagation phase of a virus?	04	CO3	Understand
iv)	Explain Secure Shell (SSH) Protocol Stack	04	CO4	Understand
v)	Describe different steps to Implement NAC Solutions	04	CO5	Understand

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vi)	Differentiate different types of Intrusion prevention System.	04	CO6	Analyze
Q.3	Solve any two questions out of three.	16		
i)	Consider online mobile shopping sites and discuss the different threats, Attacks, and security mechanisms for mobile shopping sites.	08	CO1	Apply
ii)	A user wishes to do online transactions with Amazon.com. Discuss a protocol which can be used to set up a secure communication channel and provide server side and client side authentication. Show the steps involved in the handshake process.	08	CO4	Understand
iii)	Discuss what is SNMP? Discuss SNMRv3 Message Format	08	CO5	Understand
Q.4	Solve any two questions out of three.	16		
i)	Illustrate the generation of public and private keys and hence generation of cipher text through RSA with the help of example.	08	CO2	Apply
ii)	Discuss DoS attack. Show the different ways by which this attack can be mounted at various layers.	08	CO3	Understand
iii)	An organization named "AXCEL" wants to implement firewall for security reasons, compare different configuration of firewall and suggest suitable for organization.	08	CO6	Analyze
