School of Computing Science and Engineering

Department of Computing Science and Engineering
Mid Term Examination

Exam Date: 29 Sep 2023
Time : 90 Minutes
Marks : 50

Sem VII - CSBA3060 - Bigdata Security

Your answer should be specific to the question asked
Draw neat labeled diagrams wherever necessary

1)	Can you explain substitution techniques used in symmetric cryptography, detailing how these methods involve replacing plaintext elements with cipher elements based on specific rules or algorithms?	K2	(2)
2)	Define the term "cryptoanalysis" and elaborate on its significance in the context of cryptography. Highlight the main objectives and methods involved in cryptoanalysis.	K1	(3)
3)	Explain ransomware as a form of malicious software that encrypts a victim's data, demanding a ransom for its release, and discuss its impact on system data, which can lead to loss of access and data integrity.	K2	(4)
4)	Provide a definition of MIME (Multipurpose Internet Mail Extensions) and explain its purposes, particularly its role in extending email messages to support various data types beyond simple text.	K2	(6)
5)	Show the working of the RSA encryption algorithm, including the generation of public and private keys, encryption, and decryption processes.	K3	(6)
6)	Differentiate between Kerberos version 5 and version 4, highlighting improvements such as stronger security mechanisms, support for stronger encryption, and enhanced scalability.	K3	(9)
7)	Examine different approaches for intrusion detection, including signature-based, anomaly-based, and behavior-based methods, evaluating their strengths and limitations.	K4	(8)
8)	Examine the role of authentication requirements in establishing a secure communication channel. Identify and categorize different authentication factors, such as something you know, have, and are. Explain how the combination of these factors enhances security. Provide practical examples of multi-factor authentication (MFA) implementations in different domains.	K4	(12)
	OR		
	Compare and contrast cryptography and steganography, exploring how each technique focuses on data protection through different means – encryption and hiding respectively – highlighting their distinct purposes and applications.	K4	(12)