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Printed Page:-3 **Subject Code:- BCSBS0603**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)
B.Tech
SEM: VI - THEORY EXAMINATION (2025 - 2026)
Subject: Information Security

Time: 3 Hours **Max. Marks: 100**

General Instructions:

IMP: *Verify that you have received the question paper with the correct course, code, branch etc.*

1. *This Question paper comprises of* ***three Sections -A, B, & C.*** *It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.*

2. *Maximum marks for each question are indicated on right -hand side of each question.*

3. *Illustrate your answers with neat sketches wherever necessary.*

4. *Assume suitable data if necessary.*

5. *Preferably, write the answers in sequential order.*

6. *No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.*

SECTION-A 20

1. Attempt all parts:-

(1.1) A threat is_____(CO1,K1) 1

(a) Protection
(b) Danger
(c) Policy
(d) Rule

(1.2) Unauthorized access is a_____(CO1,K1) 1

(a) Policy
(b) Threat
(c) Violation
(d) Control

(1.3) Access control based on security labels is called_____(CO2,K2) 1

(a) DAC
(b) MAC
(c) RBAC
(d) Firewall

(1.4) Outsider attack is performed by_____(CO2,K2) 1

(a) Employee
(b) Admin
(c) Hacker
(d) System

(1.5) _____ is used to verify user identity.(CO3,K2) 1

(a) Identification
(b) Authentication
(c) Integrity
(d) Access control

(1.6) Fingerprint is an example of _____ authentication.(CO3,K2) 1

(a) Password-based
(b) Token-based
(c) Biometric
(d) Role-based

(1.7) _____ protects data during transmission(CO4,K2). 1

(a) Encryption
(b) Logging
(c) Auditing
(d) None of these

(1.8) _____ refers to protection of personal information.(CO4,K2) 1

(a) Data mining
(b) Data privacy
(c) Data entry
(d) Data cleaning

(1.9) _____ isolates applications for security.(CO5,K2) 1

(a) Redundancy
(b) Encryption
(c) Firewall
(d) Logging

(1.10) _____ ensures system reliability by duplication.(CO5,K2) 1

(a) Compiler
(b) OS
(c) Database
(d) Antivirus

2. Attempt all parts:-

(2.1) Discuss confidentiality.(CO1,K2) 2

(2.2) State temporal access control.(CO2,K2) 2

(2.3) State identity representation in computing systems.(CO3,K2) 2

(2.4) State the purpose of auditing.(CO4,K2) 2

(2.5) Discuss boot loader security.(CO5,K2) 2

SECTION-B 30

Answer any one of the following:-

(3.1) Explain different types of security violations and ways to overcome them (CO1,K2) 6

(3.2) Explain the concept of security policy.(CO1,K2) 6

Answer any one of the following:-

(3.3)	Create a Task Based Access Control model for an online banking system and explain its structure.(CO2,K4)	6
(3.4)	Discuss transposition techniques in detail. How do they differ from substitution techniques? Explain with example(CO2,K2)	6

Answer any one of the following:-

(3.5)	Apply identity representation techniques in designing a secure login system.(CO3,K3)	6
(3.6)	Use different authentication mechanisms to secure an e-commerce platform.(CO3,K2)	6

Answer any one of the following:-

(3.7)	Evaluate forensic tools used in cybercrime investigation.(CO4,K4)	6
(3.8)	Classify types of malicious logic used in cyber attacks.(CO4,K2)	6

Answer any one of the following:-

(3.9)	Describe Windows file system security features.(CO5,K2)	6
(3.10)	Explain the role of antivirus software in OS security.(CO5,K2)	6

SECTION-C 50

4. Answer any one of the following:-

(4.1)	Compare different types of security threats and their impact on systems.(CO1,K2)	10
(4.2)	Evaluate how insider threats differ from external threats.(CO1,K2)	10

5. Answer any one of the following:-

(5.1)	Explain the working of a Firewall and evaluate different types . Suggest the most suitable firewall for an enterprise network.(CO2,K2)	10
(5.2)	Explain the concept of a Unified Access Control Model. How does combining different access control approaches improve overall system security?(CO2,K2)	10

6. Answer any one of the following:-

(6.1)	Examine the principle of economy of mechanism with examples in system design.(CO3,K2)	10
(6.2)	Examine the concept of open design and its role in secure systems(CO3,K2)	10

7. Answer any one of the following:-

(7.1)	Analyze user security threats and propose mitigation strategies.(CO4,K3)	10
(7.2)	Evaluate the working mechanism of digital signature with the help of public key cryptography and illustrate its generation and verification process.(CO4,K3)	10

8. Answer any one of the following:-

(8.1)	Discuss Windows Defender and built-in security tools in Windows OS.(CO5,K2)	10
(8.2)	Explain the concept of secure boot and its importance in system integrity.(CO5,K2)	10