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Printed Page:-4 **Subject Code:- BCSCY0403**

Roll. No:

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

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) Ethical hacking refers to (CO1, K1) 1

(a) Illegal hacking
(b) Authorized security testing
(c) Data theft
(d) Virus creation

(1.2) Passive reconnaissance involves (CO1, K2) 1

(a) Direct interaction
(b) No direct contact
(c) Password cracking
(d) Malware injection

(1.3) Footprinting refers in Ethical Hacking (CO2, K2) 1

(a) Data deletion
(b) Information gathering
(c) Encryption
(d) Coding

(1.4) Network scanning identifies (CO2, K2) 1

(a) Files
(b) Open ports
(c) Passwords
(d) CPU

(1.5) Web application security focuses on (CO3, K2) 1

(a) Network cables
(b) Application protection
(c) CPU speed
(d) Storage

(1.6) DOM-based XSS uses (CO3, K2) 1

(a) Network
(b) Server
(c) Browser
(d) OS

(1.7) Port scanning is used for (CO4, K2) 1

(a) Encrypting data
(b) Discovering open ports
(c) Blocking traffic
(d) Logging events

(1.8) Nmap is used for (CO4, K2) 1

(a) Password cracking
(b) Network scanning
(c) Encryption
(d) Backup

(1.9) The main purpose of Firewall (CO5,K2) 1

(a) To increase internet speed
(b) To block unauthorized network access
(c) To create strong passwords
(d) Logs

(1.10) Brute force attack uses (CO5, K3) 1

(a) One password
(b) Multiple guesses
(c) Encryption
(d) Firewall

2. Attempt all parts:-

(2.1) Mention legal considerations in ethical hacking. (CO1,K2) 2

(2.2) State purpose of reconnaissance in ethical hacking. (CO2, K2) 2

(2.3) List common web application vulnerabilities. (CO3, K2) 2

(2.4) Identify the service on port 443. (CO4,K3) 2

(2.5) Define system hacking and state its objective in cybersecurity (CO5, K3) 2

SECTION-B 30

Answer any one of the following:-

(3.1) Describe different types of hackers with suitable examples and roles. (CO1, K3) 6

(3.2) Explain the process of information gathering using search engines, social media, and WHOIS lookup. (CO1, K3) 6

Answer any one of the following:-

(3.3) Compare passive and active reconnaissance methods. (CO2, K2) 6

(3.4) Explain enumeration and its role in extracting system information. (CO2, K3) 6

Answer any one of the following:-

(3.5) Explain web application security and its importance in protecting online systems. (CO3, K3) 6

(3.6) Explain CSRF attack and its impact on web applications. (CO3, K2) 6

Answer any one of the following:-

(3.7) Describe TCP SYN scan and TCP connect scan with differences. (CO4, K2) 6

(3.8) Explain the working of Nessus as a vulnerability scanning tool. (CO4, K3) 6

Answer any one of the following:-

(3.9) Describe different password cracking techniques with examples. (CO5, K3) 6

(3.10) Discuss the Reverse Engineering and explain its importance in Ethical Hacking. (CO5, K2) 6

SECTION-C 50

4. Answer any one of the following:-

(4.1) A company hires an ethical hacker to test its website security. Identify the purpose of ethical hacking in this situation. (CO1, K2) 10

(4.2) Analyze the importance of permission and authorization in ethical hacking activities. (CO1, K3) 10

5. Answer any one of the following:-

(5.1) During a security test, an ethical hacker finds weak passwords on employee accounts. Explain why weak passwords are a security risk. (CO2, K2) 10

(5.2) Explain the working of Cuckoo Sandbox and its role in malware analysis. (CO2, K3) 10

6. Answer any one of the following:-

(6.1) Explain HTTP & HTTPS protocol and write its role in secure communication. (CO3, K3) 10

(6.2) A company receives suspicious emails asking employees to click unknown links. Demonstrate the steps an ethical hacker would suggest to avoid phishing attacks. (CO3, K3) 10

7. Answer any one of the following:-

(7.1) Describe OpenVAS architecture in detail and its use in vulnerability management. (CO4, K3) 10

(7.2) Explain firewall concepts, types, and configurations in network defense. (CO4, K3) 10

8. Answer any one of the following:-

(8.1) An organization plans to allow employees to work remotely using public Wi-Fi networks. Evaluate the security practices required to protect company data during remote access. (CO5, K4) 10

(8.2) A server is running outdated software with known security flaws. Apply suitable methods to identify and reduce system vulnerabilities before they are exploited. 10

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(CO5, K3)