

Printed Page:-

Subject Code:- BCSCY0402

Roll. No:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: IV - THEORY EXAMINATION (20.....- 20.....)

Subject: Cyber Security Essentials

Time: 2 Hours

Max. Marks: 50

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

15

1. Attempt all parts:-

- 1-a. Choose Which type of attack uses malicious QR codes to compromise smartphones? (CO1, K1) 1
- (a) Smishing
 - (b) Phishing
 - (c) QRLjacking
 - (d) Ransomware
- 1-b. OpenVPN configuration involves this type of key for encryption. (CO2, K1) 1
- (a) Public Key
 - (b) Master Key
 - (c) Encrypted Key
 - (d) Pre-Shared Key
- 1-c. Tool used for analyzing network traffic to detect anomalies. (CO3, K2) 1
- (a) Tcpdump
 - (b) Wireshark
 - (c) Netstat
 - (d) Nessus
- 1-d. SSL/TLS protocols primarily provide which of the following? (CO4, K2) 1
- (a) Data Compression
 - (b) Encryption

- (c) Access Control
- (d) Traffic Filtering
- 1-e. A password should include which characters? (CO5, K1) 1
 - (a) Letters only
 - (b) Letters and numbers
 - (c) Letters, numbers, and special characters
 - (d) Letters and special characters

2. Attempt all parts:-

- 2.a. Explain how phishing attacks can compromise personal laptops. (CO1, K2) 2
- 2.b. List any two protocols commonly used in VPNs. Give their advantage also. (CO2, K1) 2
- 2.c. List advantages of automating network analysis with scripts. (CO3, K2) 2
- 2.d. How do ACLs differ from traditional firewalls? (CO4, K2) 2
- 2.e. State one principle of a strong password. (CO5, K1) 2

SECTION-B

15

3. Answer any three of the following:-

- 3-a. A malware variant is propagating through IoT devices globally. What strategies can manufacturers and end-users employ to minimize this risk? (CO1, K2) 5
- 3.c. Explore the role of forensic analysis in cybersecurity and how Wireshark can be used as a tool to preserve and analyze digital evidence from network traffic during an investigation. (CO3, K2) 5
- 3-b. Explain the concept of Virtual Private Networks (VPNs) and their role in securing communication networks. (CO2, K2) 5
- 3.d. Analyze how Virtual Private Networks (VPNs) enhance network security, especially in securing remote access, and discuss the importance of secure routing protocols in protecting data during transmission. (CO4, K2) 5
- 3.e. Elaborate on the principles of password security with detailed examples of best practices for strong password creation. (CO5, K2) 5

SECTION-C

20

4. Answer any one of the following:-

- 4-a. Discuss the role of antivirus software in securing personal devices. (CO1, K1) 4
- 4-b. Compare IoT attacks on smart homes versus smart cities. (CO1, K2) 4

5. Answer any one of the following:-

- 5-a. Name any two encryption protocols supported by OpenVPN. (CO2, K2) 4
- 5-b. Explain the difference between a Remote Access VPN and a Site-to-Site VPN. (CO2, K2) 4

6. Answer any one of the following:-

- 6-a. Summarize the key steps in performing forensic analysis of network traffic with 4

Wireshark. (CO3, K3)

6-b. Explain the significance of protocol decoding in incident response scenarios. (CO3, K2) 4

7. Answer any one of the following:-

7-a. Explain the importance of web application security in the application layer. (CO4, K2) 4

7-b. Describe the steps involved in installing and setting up Kali Linux. (CO4, K3) 4

8. Answer any one of the following:-

8-a. Describe the working principle of a dictionary attack. (CO5, K2) 4

8-b. Mention three methods to secure passwords from online attacks. (CO5, K2) 4

REG:JAN_JUN-2025