



End Term (Even) Semester Examination May-June 2025

Roll No.:

Name of the Program: B. Tech (CSE)

Semester: IV

Name of the Course: Fundamental of Cyber Security

Course Code: TCS 495

Time: 3 Hours

Maximum Marks: 100

Note:

- (i) All the questions are compulsory.
- (ii) Answer any two sub questions from a, b and c in each main question.
- (iii) Total marks for each question is 20 (twenty).
- (iv) Each sub-question carries 10 marks.

Q1	Attempt any two parts only	10X2	
(a)	What is cyber security? How CIA triad model protects systems and organization.		CO2
(b)	Describe following: i) Types of hackers ii) Types of attacks		CO1
(c)	Define the goal of penetration testing. How its life cycles safe the system and its resources? Explain with examples.		CO2
Q2	Attempt any two parts only	10X2	
(a)	Define shell in Linux operating system. How shell interacts with OS kernel and user applications, Explain with layered approach.		CO4
(b)	What are different types of permission given to a file. Explain with symbolic and numeric representation. i) A network security professional trying to scan the IP and MAC address of a system to indentify incoming traffic source. What command he will use write it with syntax. ii) Write a command with syntax to execute a file at 02:00 AM for backup of the system without human intervention.		CO4
(c)	Write the program for the following cases: i) Write a shell script to store hostname, IP address, user name of a system. ii) Write a script in python to store IP address and ports of all systems in a network.		CO4
Q3	Attempt any two parts only	10X2	
(a)	What are the different classes of IPv4, describes each? Why there is need of IPv6. How an attacker use IP addresses to perform attacks.		CO3
(b)	Suppose a host running three VMs in this setup what are the different way to provide network connection to these VMs. Explain role of hypervisor.		CO3
(c)	In a network a security professional want to analyze a packet. By which tool he will able to do this task. Explain with all three parts of tool and its parameters.		CO5



Q4	Attempt any two parts only	10X2	
(a)	Differentiates following with examples: i) Network vulnerability and Web vulnerability ii) Phishing and Spear phishing attacks		CO4
(b)	A person using services form internet at his home to make bill payment, in this scenarios which web application model used by the person and company. An attacker can perform which kind of attack form the person system. Explain each.		CO5
(c)	Describe following: i) XSS attack and its types with examples ii) SQL injection with five possible query		CO5
Q5	Attempt any two parts only	10X2	
(a)	Explain following with use case: i) Threats ii) Attacks iii) Vulnerability iv) Malware		CO1
(b)	While doing business operation suddenly the server gets slowdown due to heavy traffic and users not get services. What kind of attacks possible in this case? As a security analyst how you investigate and find the types of attacks. If the data locked or encrypted at server then what solution you suggest and what kind of attacks happened in this case.		CO3
(c)	A communication happened between two systems on network. In between two systems attacker A intercept data and store in its laptop. While attacker B intercept data and manipulate it. Explain the types of attacks performed by the attackers A and B.		CO3