

## TABLE OF CONTENTS

Chapter No.	Title	Page No.
<b>1</b>	<b>Introduction to Cyber Security</b>	<b>1-29</b>
	1.1 Definition and Importance 1.2 History and Evolution 1.3 Types of Cyber Crimes 1.4 Security Goals (CIA Triad) 1.5 Cyber Security Domains	
<b>2</b>	<b>Networking Fundamentals</b>	<b>30-57</b>
	2.1 Network Models (OSI, TCP/IP) 2.2 IP Addressing and Subnetting 2.3 Protocols and Ports 2.4 Firewalls and Routers 2.5 Virtual Private Networks (VPNs) 2.6 Network Monitoring Tools	
<b>3</b>	<b>Cryptography and Data Security</b>	<b>58-82</b>
	3.1 Encryption and Decryption 3.2 Symmetric vs Asymmetric Cryptography 3.3 Digital Signatures and Certificates 3.4 Hashing Techniques 3.5 Public Key Infrastructure (PKI) 3.6 Applications of Cryptography	
<b>4</b>	<b>Cyber Threats and Attack Vectors</b>	<b>83-104</b>
	4.1 Malware (Viruses, Worms, Trojans) 4.2 Phishing and Social Engineering 4.3 Denial of Service (DoS/DDoS) 4.4 Man-in-the-Middle Attacks 4.5 Zero-Day Exploits 4.6 Advanced Persistent Threats (APTs)	
<b>5</b>	<b>System and Network Security</b>	<b>105-132</b>
	5.1 Intrusion Detection and Prevention Systems 5.2 Security Information and Event Management (SIEM) 5.3 Patch Management 5.4 Endpoint Security 5.5 Access Control Models 5.6 Security Hardening	

<b>6</b>	<b>Web and Application Security</b>	<b>133-152</b>
	6.1 Secure Software Development Life Cycle (SDLC) 6.2 OWASP Top 10 Vulnerabilities 6.3 SQL Injection and XSS 6.4 Authentication and Authorization 6.5 Web Application Firewalls 6.6 API Security	
<b>7</b>	<b>Cloud and Iot Security</b>	<b>153-175</b>
	7.1 Cloud Computing Security Challenges 7.2 Identity and Access Management (IAM) 7.3 Data Protection in Cloud 7.4 IoT Vulnerabilities 7.5 Secure IoT Architectures 7.6 Case Studies in Cloud/IoT Security	
<b>8</b>	<b>Incident Response and Digital Forensics</b>	<b>176-192</b>
	8.1 Incident Response Process 8.2 Evidence Collection and Preservation 8.3 Forensic Tools and Techniques 8.4 Chain of Custody 8.5 Malware Forensics 8.6 Case Studies in Incident Response	
<b>9</b>	<b>Cyber Laws, Policies and Risk Management</b>	<b>193-211</b>
	9.1 International Cyber Laws 9.2 Indian IT Act and Amendments 9.3 Standards (ISO, NIST, GDPR) 9.4 Risk Assessment Frameworks 9.5 Business Continuity Planning 9.6 Disaster Recovery Planning	
<b>10</b>	<b>Emerging Trends and Future Directions</b>	<b>212-231</b>
	10.1 Artificial Intelligence in Cyber Security 10.2 Blockchain Security 10.3 Quantum Cryptography 10.4 Zero Trust Architecture 10.5 Cyber Security in 5G Networks 10.6 Future Challenges and Opportunities	