## UNIT I

**Chapter 1 : Introduction to Computer & Information Security** **1-1 to 1-33**

**Syllabus : Foundations of Computer Security :** Definition and Need of computer security, Security Basics: Confidentiality, Integrity, Availability, Accountability, Non - Repudiation and Reliability. **Risk and Threat Analysis :** Assets, Vulnerability, Threats, Risks, Counter measures. **Threat to Security :** Viruses, Phases of Viruses, Types of Virus, Dealing with Viruses, Worms, Trojan Horse, Intruders, Insiders. **Type of Attacks :** Active and Passive attacks, Denial of Service, DDOS, Backdoors and Trapdoors, Sniffing, Spoofing, Man in the Middle, Replay, TCP/IP Hacking, Encryption attacks. **Operating system security :** Operating system updates HotFix, Patch, Service Pack. Information, Need and Importance of Information, information classification, criteria for information classification, Security, need of security, Basics principles of information security.

**UNIT II**



**Syllabus :** **Identification and Authentication :** User name and Password, Guessing password, Password attacks- Piggybacking, Shoulder surfing, Dumpster diving. **Biometrics :** Finger Prints, Hand prints, Retina, patterns, Voice patterns, Signature and Writing patterns, Keystrokes. **Access controls :** Definition, Authentication Mechanism, rinciple- Authentication, Authorization, Audit, Policies : DAC, MAC,RBAC.

**UNIT III**



**Syllabus :** Introduction: Plain Text, Cipher Text, Cryptography, Cryptanalysis, Cryptology, Encryption, Decryption. Substitution Techniques : Caesar's cipher, Modified Caesar's Cipher, Transposition Techniques : Simple Columnar Transposition. Steganography : Procedure. Symmetric and Asymmetric cryptography: Introduction to Symmetric encryption, DES (Data encryption Standard) algorithm, Asymmetric key cryptography: Digital Signature.

**UNIT IV**



**Syllabus :** Firewall Need of Firewall, types of firewall- Packet Filters, Stateful Packet Filters, Application Gateways, Circuit gateways. Firewall Policies, Configuration, limitations, DMZ. Intrusion Detection System Vulnerability Assessment, Misuse detection, Anomaly Detection, Network- Based IDS, Host-Based IDS, Honeypots

## UNIT V



**Syllabus :** Kerberos: Working, AS, TGS, SS. IP Security- Overview, Protocols- AH, ESP, Modes- transport and Tunnel. Email security- SMTP, PEM, PGP. Public key infrastructure (PKI): Introduction, Certificates, Certificate authority, Registration Authority, X.509/PKIX certificate format. Cyber Crime : Introduction, Hacking , Digital Forgery, Cyber Stalking/Harassment, Cyber Pronography, Identify Theft and Fraud, Cyber terrorism, Cyber Defamation. Cyber Laws : Introduction need, Categories : Crime against Individual, Government, Property. Compliance standards : Implementing and Information Security Management System, ISO 27001, ISO 20000, BS 25999, PCI DSS, ITIL framework, COBIT framework.

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