

KARACHI EDU • PROFESSIONAL COACHING CENTER NOTES

Chapter 5: Computer Security & Ethics

Grade 9 Computer Science • Sindh Textbook Board (STBB) Comprehensive
Lecture Deck



Fundamentals of Computer Security

Protecting computer hardware, software, network systems, and digital data from damage or unauthorized access.



Core Definition

Safeguarding digital assets against theft, corruption, system failure, and malicious intrusion.



CIA Triad Principles

Confidentiality (privacy), Integrity (accuracy), and Availability (reliable access).

Software Threats: Understanding Malware

Malicious software designed to infiltrate, disrupt, or damage computer systems.

Computer Virus

Self-replicating program attaching itself to clean files to spread damage.

Computer Worm

Standalone software duplicating itself across network connections rapidly.

Trojan Horse

Disguised as useful software while carrying hidden destructive code.

Spyware & Adware

Secretly monitors user activity or forces unwanted commercial ads.

Network Security Breaches & Cybercrime

Common methods used by unauthorized actors to exploit computer networks.

Phishing Scams

Fraudulent emails or websites mimicking trusted brands to steal passwords and credit data.

Identity Theft

Stealing personal details to commit financial fraud under another person's name.

Hacking & Cracking

Bypassing system security barriers to gain unauthorized access to data reserves.

Defense Mechanisms & Antivirus Tools

Essential strategies to safeguard computers against malware infections.

Antivirus Software

Scans files and memory for virus signatures, quarantines threats, and cleans infected files (e.g., Windows Defender, Avast).

Firewalls & Backups

Monitors incoming/outgoing network traffic and maintains secure backup copies of critical data on external media or cloud drives.

Computer Ethics & Intellectual Property

Moral guidelines and legal frameworks governing digital information usage.

Copyright & Piracy

Copyright legally protects creators' intellectual property. Software piracy involves illegal copying, distribution, or use of licensed software.

Digital Privacy & Ethics

Respecting user confidentiality, avoiding cyberbullying, and preventing unauthorized access or dissemination of personal data.

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End of Chapter 5 Notes

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