CYBER SECURITY

UNIT 6: Protecting Your Computing Devices and Safeguarding Online Privacy

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1. Protecting Your Computing Devices

Definition:
Protecting computing devices involves implementing security measures to safeguard computers, laptops, smartphones, and tablets from malware, unauthorized access, and cyberattacks. It ensures the confidentiality, integrity, and availability of the data stored or processed on these devices. Protection includes software updates, antivirus installation, firewalls, and secure password management. It is essential for both personal and organizational devices to prevent data theft and maintain operational efficiency.

Explanation with Example:
Device protection can be achieved by enabling firewalls, installing antivirus and anti-malware software, keeping operating systems and applications updated, and using strong passwords. For example, many enterprises enforce endpoint security policies on employee laptops to prevent ransomware attacks. Secure configurations and regular monitoring ensure that vulnerabilities are minimized. In IoT devices, firmware updates help prevent hackers from exploiting known vulnerabilities. A real-world example is how banks use encrypted mobile banking apps to protect user devices and prevent unauthorized access.

Summary in Hinglish:
Device ko protect karna matlab malware aur unauthorized access se bachana aur data safe rakhna.

Applications:

1. Enterprise laptop and desktop security.
2. Mobile device management in organizations.
3. Antivirus protection for personal computers.

4. Endpoint security in corporate networks.
5. IoT device security in smart homes and factories.

Advantages:

1. Prevents malware infections.
2. Protects sensitive data.
3. Reduces risk of hacking.
4. Ensures device reliability and uptime.
5. Enhances overall cybersecurity posture.

Disadvantages:

1. Requires regular updates and maintenance.
2. Can be costly for large organizations.
3. Some protective software may reduce system performance.
4. Human error in security settings can lead to vulnerabilities.
5. Advanced threats may bypass protections.

Example:
Microsoft Defender Antivirus and **MacOS Gatekeeper** protect personal and organizational devices from malware and unauthorized access.

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2. Safeguarding Online Privacy

Definition:
Safeguarding online privacy involves protecting personal information shared or stored online, including social media accounts, emails, cloud storage, and browsing activity. It includes controlling who can access the data and how it is used. Proper privacy protection prevents identity theft, unauthorized tracking, and misuse of personal information.

Explanation with Example:
Users can safeguard privacy by enabling two-factor authentication (2FA), using secure browsers, managing social media settings, and avoiding public Wi-Fi for sensitive transactions. For example, Facebook

and Google allow privacy controls to restrict data sharing. IoT devices like smart cameras or assistants should have password protection and encrypted communication. Email encryption and VPNs also help protect online privacy. For instance, Apple's **App Tracking Transparency** feature limits app access to user data, enhancing privacy protection.

Summary in Hinglish:
Online privacy safeguard karna matlab apni personal info ko internet par secure rakhna aur misuse se bachana.

Applications:

1. Social media privacy settings.
2. Email encryption for secure communication.
3. Using VPNs for safe browsing.
4. Two-factor authentication for accounts.
5. Limiting IoT device data access.

Advantages:

1. Prevents identity theft.
2. Protects personal and sensitive data.
3. Reduces risk of cyberattacks.
4. Builds user confidence online.
5. Enables safe online behavior.

Disadvantages:

1. Some privacy tools reduce convenience.
2. Requires user awareness and vigilance.
3. Misconfigured settings can lead to vulnerabilities.
4. Privacy measures need regular updates.
5. Advanced attackers may bypass protections.

Example:
Have I Been Pwned helps users check if their email or password has been compromised in a data breach.

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