**Assessment**

**Define cybersecurity and explain its key components.**

Cybersecurity refers to the practices, technologies, and processes designed to protect networks, devices, programs, and data from unauthorized access, damage, or attack. Key components include network security, application security, information security, operational security, end-user education, and disaster recovery and business continuity.

**Discuss the importance of cybersecurity in protecting sensitive data and maintaining business operations.**

Cybersecurity plays a vital role in:

* Safeguarding sensitive data (personal information, financial data, intellectual property) from unauthorized access.
* Maintaining business operations by ensuring continuous availability and reliability of critical systems and services.
* Complying with legal requirements and industry standards.
* Preventing financial losses caused by fraud, theft, and operational disruptions.
* Protecting reputation by preventing data breaches and cyberattacks.

**Describe the CIA triad and provide examples of measures to ensure confidentiality, integrity, and availability.**

The CIA triad represents three primary cybersecurity objectives:

**Confidentiality:**

* Ensuring information is only accessible to authorized individuals.
* Measures: Encryption, access controls, data masking.
* Example: Encrypting credit card information during online transactions.

**Integrity:**

* Preserving the accuracy and reliability of information without unauthorized alterations.
* Measures: Hashing, digital signatures, version control.
* Example: Using hashing algorithms to verify the integrity of downloaded files.

**Availability:**

* Providing authorized users with access to information and resources when needed.
* Measures: Redundancy, load balancing, DDoS protection.
* Example: Using redundant servers to ensure continuous operation of an online banking platform even if one server fails.