

AP Cybersecurity | Unit 5

5.1 CIA Triad for Applications

Problems

Name: _____ Date: _____

Reference scenario

Separate three security goals for a student-record application.

Unauthorized reading: confidentiality

Unauthorized grade change: integrity

Service outage: availability

5.1.1

An attacker changes a posted exam schedule while the site stays online. Which goal is most directly affected?

5.1.2

Why do backups support recovery but not automatically prevent unauthorized disclosure?

AP Cybersecurity | Unit 5

5.2 Roles, Permissions, and Data Ownership

Problems

Name: _____ Date: _____

Reference scenario

Review permissions for a shared finance document.

Public link: edit allowed

Reviewer role: needs read only

Owner: finance manager

Former contractor: still listed

5.2.1

A reviewer needs comments but not deletion rights. What principle guides the assigned role?

5.2.2

What should a periodic access review compare?

AP Cybersecurity | Unit 5

5.3 Cryptography, Hashing, and Data Movement

Problems

Name: _____ Date: _____

Reference scenario

Choose a cryptographic mechanism based on the required property.

Goal A: private transfer

Goal B: compare a downloaded file with a trusted digest

Goal C: recover readable stored data with a key



5.3.1

Can Base64 encoding protect a secret from a person who receives the encoded text? Explain.

5.3.2

Why is a salted, deliberately slow password-hashing scheme preferable to storing plaintext passwords?

AP Cybersecurity | Unit 5

5.4 Application Attacks, Logs, and Recovery

Problems

Name: _____ Date: _____

Reference scenario

A user can request another student record by changing an identifier in the application request. Identify the missing control.

Authenticated user: student A
Requested record owner: student B
Server result: record returned
Ownership check: absent

5.4.1

Why is client-side input validation insufficient as the only protection for an application endpoint?

5.4.2

After correcting the record-ownership check, give one positive and one negative regression test.