

Exercise walk-through

Cyber Foundations ■ 2.1

eXercise

You must be able to

- state the CIA triad and say which goal a control protects
- define risk and the four risk responses (avoid, transfer, mitigate, accept)
- classify controls by type (physical/technical/managerial) and function (preventative/detective/corrective)

Method — The CIA triad

Confidentiality = only authorised people read the data. Integrity = the data is accurate and unaltered. Availability = it is there when needed. Encryption serves confidentiality, a hash checks integrity, a backup serves availability.

Method — Classifying controls

By type: physical (locks, fences), technical (firewalls, encryption), managerial (policies). By function: preventative (a lock), detective (a camera), corrective (patching). A camera is physical by type and detective by function.

Practice 2.1 ■ 3 marks

State the three goals of the **CIA triad**.

Solution 2.1

Worked steps

confidentiality **B1**; integrity **B1**; availability **B1**.

Practice 2.2 ■ 2 marks

Define **risk** in terms of a threat, a vulnerability, and an asset.

Solution 2.2

Worked steps

risk occurs when a threat **B1** can exploit a vulnerability to compromise an asset **B1**.

Practice 2.3 ■ 1 mark

Classify each control below.

- (a) A door lock - by function (preventative/detective/corrective)?
- (b) A CCTV camera - by function?
- (c) Patching a vulnerability - by function?

Solution 2.3

Method: Classifying controls

Worked steps

(a) preventative **B1**. (b) detective **B1**. (c) corrective **B1**.

Exam-style 3.1 ■ 1 mark

Encrypting a stored file mainly protects which CIA goal?

A availability

B confidentiality

C integrity

D authority

Solution 3.1

A availability

B confidentiality 

C integrity

D authority

Worked steps

B. encryption hides data, protecting confidentiality.

Exam-style 3.2 ■ 1 mark

An organisation buys insurance against a cyber loss. Which risk response is this?

A avoid

B transfer

C mitigate

D accept

Solution 3.2

A avoid

B transfer



C mitigate

D accept

Worked steps

B. shifting the burden to an insurer is transference.

Exam-style 3.3 ■ 3 marks

A company adds a firewall, a camera, and a written access-review policy.

(a) Classify each by type (physical/technical/managerial).

Solution 3.3

Method: Classifying controls

Worked steps

(a) firewall = technical **B1**; camera = physical **B1**; access-review policy = managerial **B1**.