Exercise walk-through

Safe Computing ▪ 5.6

eXercise

You must be able to

- explain how **personally identifiable information (PII)** 个人身份信息 can be misused
- describe threats such as **phishing** 钓鱼, malware, and social engineering
- explain how **encryption** 加密 protects data
- distinguish **symmetric** 对称 from **asymmetric** 非对称 encryption

Method — PII and threats

Personally identifiable information (PII) — such as a name, address, or ID number — can be misused if exposed. Common threats include **phishing** (fake messages that trick you), **malware**, and **social engineering**.

Method — Encryption

Encryption encodes data so that only authorized users can read it.

- **Symmetric** encryption uses **one shared key** for both encoding and decoding.
- **Asymmetric** encryption uses a **public + private key pair**.

Safe practices include strong **authentication** and cautious sharing.

Practice 2.1 ▪ 1 mark

State what PII is.

Solution 2.1

Worked steps

personally identifiable information — data that can identify a person, which can be misused if exposed B1.

Practice 2.2 ▪ 2 marks

Name two common security threats.

Solution 2.2

Method: PII and threats

Worked steps

any two of: phishing, malware, social engineering B1 B1.

Practice 2.3 ▪ 1 mark

State what encryption does.

Solution 2.3

Worked steps

it encodes data so that only authorized users can read it B1.

Exam-style 3.1 ▪ 1 mark

PII stands for personally identifiable

A internet

B information

C interface

D index

Solution 3.1

Method: PII and threats

A internet

B information ✓

C interface

D index

Worked steps

B.

Exam-style 3.2 ▪ 1 mark

Encryption protects data by

A deleting it

B encoding it so only authorized users can read it

C compressing it

D sorting it

Solution 3.2

Method: Encryption

A deleting it

B encoding it so only authorized users can read it ✓

C compressing it

D sorting it

Worked steps

B.

Exam-style 3.3 ▪ 1 mark

A fake email tricks a user into revealing a password.
(a) Name this type of threat.
(b) Name one safe practice that reduces the harm.
(c) State the difference between symmetric and asymmetric encryption.

Solution 3.3

Method: Encryption

Worked steps

(a) phishing B1. (b) strong authentication, or being cautious about sharing information (any one) B1. (c) symmetric uses one shared key; asymmetric uses a public and private key pair B1.