

1.4 AI-Based Cybersecurity Attacks

Name: _____ Class: _____ Date: _____

Total: 11 marks

KEY WORDS deepfake 深度伪造 • phishing 钓鱼 • shared secret 共享秘密 • adversary 对手
• impersonate 冒充

Objective

Build the skills to answer exam questions on how adversaries use AI, including **deepfakes** 深度伪造 and AI-written **phishing** 钓鱼.

You must be able to:

- explain how AI augments attacks (deepfakes, flawless phishing, data poisoning)
- describe defenses: a **shared secret** 共享秘密, MFA, verifying AI output

1 Worked examples

Study these first. Each one shows the method for a task used later.

■ How AI helps attackers

AI can clone a voice or face (a deepfake) to impersonate someone on a call, and can write phishing emails in perfect, native-sounding language - removing the bad grammar that once exposed scams.

■ Defending against AI attacks

Agree a shared secret word with close contacts to verify identity, enable MFA so a cloned voice cannot log in, and never trust AI output without checking a reliable non-AI source.

2 Practice

2.1 Explain how AI makes phishing emails harder to spot.

[2]

2.2 State one defense against a deepfake voice call and explain how it helps. [2]

2.3 Why should you not type sensitive data into a chatbot? [2]

3 Exam-style questions

3.1 An AI clone of a person's voice, used to impersonate them, is called a [1]

- | | |
|---|---|
| A | B |
| C | D |
- A** honeypot
 - B** deepfake
 - C** keylogger
 - D** baseline

3.2 Which defense best stops an adversary who has only cloned an employee's voice? [1]

- | | |
|---|---|
| A | B |
| C | D |
- A** a longer password
 - B** multifactor authentication
 - C** a brighter screen
 - D** a faster network

3.3 An employee receives an urgent video call from the "CEO" asking to transfer money.

(a) State what kind of attack this could be. [1]

(b) Describe one way the employee could verify the caller's identity. [2]
