Technology

VOCABULARY PRACTICE
ADVANCED | C1

Name: _____ Date: _____

1 Match each advanced term with its definition.

1 technical debt ____	**a** the accumulated cost of choosing an easy but limited technical solution now, requiring future rework
2 digital divide ____	**b** the gap in access to and use of technology between different groups
3 platform lock-in ____	**c** dependence on a particular provider's product, making it costly or difficult to switch
4 algorithmic bias ____	**d** systematic and unfair discrimination embedded within an automated decision-making system
5 data sovereignty ____	**e** the principle that data is subject to the laws of the country in which it is collected
6 edge computing ____	**f** processing data near its source rather than in a centralised location
7 zero-day vulnerability ____	**g** a previously unknown software flaw that attackers can exploit before a fix exists
8 vendor neutrality ____	**h** designing systems that work equally well across different vendors' products
9 legacy system ____	**i** outdated technology or software still in use, often difficult to replace
10 systemic fragility ____	**j** a system's vulnerability to cascading failure when one component breaks down

2 Choose the most precise term for each context.

1 The accumulated cost of a limited quick fix is technical debt / a permanent solution.

2 The gap in access to technology between groups is the digital divide / universal access.

3 Dependence on one provider's product is platform lock-in / open choice.

4 Unfair discrimination embedded in an automated system is algorithmic bias / neutral processing.

5 Data subject to the laws of the country it's collected in is data sovereignty / global data flow.

6 Processing data near its source rather than centrally is edge computing / centralised computing.

7 A previously unknown exploitable flaw is a zero-day vulnerability / a patched bug.

8 Vulnerability to cascading failure is systemic fragility / robust redundancy.

3 Match the verbs with the noun phrases to form academic collocations.

1 accrue ____	**a** a zero-day vulnerability
2 bridge ____	**b** technical debt
3 mitigate ____	**c** the digital divide
4 exploit ____	**d** algorithmic bias
5 audit ____	**e** data processing
6 decentralise ____	**f** a known vulnerability
7 patch ____	**g** platform lock-in
8 entrench ____	**h** systemic fragility

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4 Complete the analysis with terms from the box.

algorithmic bias | data sovereignty | digital divide | edge computing | legacy system | platform lock-in | systemic fragility | technical debt | vendor neutrality | zero-day vulnerability

Organisations relying heavily on a single 1 _____ vendor risk 2 _____, facing considerable cost and disruption should they later wish to switch providers. This dependency often compounds existing 3 _____, the accumulated cost of earlier decisions favouring short-term convenience over long-term flexibility. Meanwhile, unequal access to reliable connectivity perpetuates the 4 _____, disadvantaging communities already facing broader structural inequality. Automated decision-making systems increasingly face scrutiny for 5 _____, since training data reflecting historical inequality can systematically disadvantage certain groups even without any deliberate intent. Governments increasingly assert 6 _____, requiring data collected within their borders to remain subject to domestic law regardless of where the processing company is based, a trend complicating 7 _____ architectures that distribute processing across many locations. Security researchers warn that an unpatched 8 _____ can remain exploitable for months before discovery, while organisations still running an outdated 9 _____ face particular risk, since ageing infrastructure often lacks modern security protections, contributing to broader 10 _____ across interconnected networks.

5 Read the text and answer the questions briefly.

The quiet accumulation of technical debt

Software engineers increasingly warn that technical debt, the accumulated cost of favouring quick, expedient solutions over more robust but time-consuming alternatives, tends to compound silently until it produces a visible crisis, often at the worst possible moment. Organisations under commercial pressure to ship products quickly frequently accept technical debt deliberately, treating it as a reasonable short-term trade-off, but without disciplined ongoing management, this debt can eventually consume a disproportionate share of engineering resources simply maintaining existing systems rather than building new capability. Legacy systems represent an extreme manifestation of this dynamic, since organisations sometimes continue relying on outdated infrastructure for years, long after replacement would have proven more cost-effective, purely because the perceived short-term cost of migration appears larger than the accumulating long-term cost of continued dependence.

1 What do software engineers increasingly warn about technical debt? _____

2 What does technical debt tend to do until it produces a visible crisis? _____

3 Why do organisations frequently accept technical debt deliberately? _____

4 What can this debt eventually consume, without disciplined management? _____

5 What do legacy systems represent an extreme manifestation of? _____

6 Why do organisations sometimes continue relying on outdated infrastructure for years? _____

6 Replace the words in bold with a precise term or collocation.

1 The company became dependent on a single vendor's product. _____

2 The automated system showed systematic, unfair discrimination. _____

3 The organisation still relied on outdated, difficult-to-replace infrastructure. _____

4 Attackers exploited a previously unknown software flaw. _____

OVER TO YOU

Write a 160-190 word critical commentary on how technical debt and platform lock-in shape long-term organisational risk, distinguishing observation from inference.

[ ] Use at least twelve target expressions. [ ] Include four academic collocations. [ ] Maintain a precise, balanced register.

ANSWER KEY

1 Advanced terms

1 a 2 b 3 c 4 d 5 e 6 f 7 g 8 h 9 i 10 j

2 Precise terms

1 technical debt 2 the digital divide 3 platform lock-in 4 algorithmic bias 5 data sovereignty 6 edge computing 7 a zero-day vulnerability 8 systemic fragility

3 Academic collocations

1 b accrue technical debt 2 c bridge the digital divide 3 h mitigate systemic fragility 4 a exploit a zero-day vulnerability
5 d audit algorithmic bias 6 e decentralise data processing 7 f patch a known vulnerability 8 g entrench platform lock-in

4 Analysis

1 vendor neutrality... note adjust 2 platform lock-in 3 technical debt 4 digital divide
5 algorithmic bias 6 data sovereignty 7 edge computing 8 zero-day vulnerability
9 legacy system 10 systemic fragility

5 Reading - suggested answers

1 That it tends to compound silently until it produces a visible crisis, often at the worst possible moment.
2 Compound silently.
3 Because they are under commercial pressure to ship products quickly.
4 A disproportionate share of engineering resources.
5 This dynamic (technical debt accumulating silently).
6 Because the perceived short-term cost of migration appears larger than the accumulating long-term cost of continued dependence.

6 Precise terms and collocations

1 platform lock-in 2 algorithmic bias 3 a legacy system 4 a zero-day vulnerability

Over to you

Answers will vary. Look for conceptual precision, evidence-aware reasoning and balanced evaluation.