Question 5

Identify two distinct malicious threats to data security and provide a concise example for each. [4 marks]

Question 6

Discuss two non-malicious threats to data security and explain how each could lead to the compromise of data availability or integrity. [4 marks]

Marking Guide

#	Sample Response	Response	Mark
5	1. Malware: This is malicious software designed to disrupt, damage, or gain unauthorized access to computer systems. An example is ransomware, which encrypts a user's files and demands a payment (ransom) to restore access, as seen in the WannaCry attack in 2017. 2. Phishing: This is a cybercrime where attackers impersonate legitimate entities to trick people into revealing sensitive information. An example is the 2016 attack on John Podesta, where a fake Google security alert email led him to enter his credentials on a counterfeit login page, granting hackers access to his email account. *(Other valid examples include SQL Injection, DDoS, Man-in-the-Middle, Insider Threats, XSS, APTs, Zero-Day Exploits, Supply Chain Attacks).*	Names first threat	1
		Provides an example of the first threat	1
		Names second threat	1
		Provides an example of the second threat	1
6	1. Human Error: This is one of the most common causes of data security threats, resulting from unintentional mistakes by users or employees. It can compromise data availability by accidentally deleting critical files or corrupt data, impacting integrity by misconfiguring security settings. A notable example is the 2017 Equifax data breach, caused by IT staff failing to apply a critical security patch for a known vulnerability. 2. Hardware Failures: These involve the malfunction of physical components like hard drives or servers, leading to sudden loss, corruption, or inaccessibility of important information. Such failures can compromise data availability if proper backups are not in place, and can corrupt data, impacting integrity. An example is the 2011 Amazon Web Services (AWS) outage, where an EBS failure led to extended downtime and data loss for numerous services. *(Other valid examples include Software Bugs, Power Outages, Natural Disasters, Network Failures, Data Synchronization Issues, Lack of Proper Backups, Environmental Factors).*	Names first threat	1
		Provides an example of the first threat	1
		Names second threat	1
		Provides an example of the second threat	1