

Computer science

Higher level

Paper 3

4 May 2026

Zone A morning | Zone B morning | Zone C morning

1 hour

Instructions to students

- Do not turn over this examination paper until instructed to do so.
- A clean copy of the **computer science case study** is required for this examination paper.
- Read the case study carefully.
- Answer all questions.
- The maximum mark for this examination paper is **[30 marks]**.

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Answer **all** questions.

1. (a) Identify **two** types of network topology. [2]

In the pre-engagement interactions phase of the penetration testing execution standard (PTES) process, boundaries and limits are defined.

- (b) Outline **one** limit that might be agreed upon during the pre-engagement interactions phase of the PTES process. [2]

2. (a) Describe **one** benefit **and one** limitation of using open-source intelligence (OSINT) techniques in the intelligence-gathering phase of the PTES process. [4]

- (b) Describe the process of network scanning. [4]

3. Automated tools and manual techniques are used in the vulnerability analysis phase of the PTES process.

Explain **two** benefits of using automated tools and manual techniques together to conduct vulnerability analysis. [6]

4. *MTPH* aims to implement a comprehensive response plan that includes proactive measures, such as the PTES process, as well as reactive measures.

Justify the implementation of a comprehensive response plan that includes proactive measures and reactive measures for managing cybersecurity incidents at *MTPH*. [12]

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