Cambridge International AS & A Level

CANDIDATE NAME	

CENTRE NUMBER		CANDIDATE NUMBER	

INFORMATION TECHNOLOGY **9626/12**

Paper 1 Theory **May/June 2024**

1 hour 45 minutes

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS
- Answer **all** questions.
- Use a black or dark blue pen.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You may use an HB pencil for any diagrams, graphs or rough working.
- Calculators must **not** be used in this paper.

INFORMATION
- The total mark for this paper is 70.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **12** pages. Any blank pages are indicated.

1   A building company has a relational database. The database has two tables: CUSTOMERS and QUOTATIONS.

(a) The QUOTATIONS table has a foreign key.

Describe what is meant by the term foreign key.

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.... [2]

(b) (i) Define the term referential integrity.

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.... [1]

(ii) Explain why referential integrity is important.

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(c) Describe what is meant by the term relational database.

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.... [5]

2 Describe how supercomputers are used for weather forecasting.

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3 A government is concerned about the digital divide amongst its citizens.

Describe how the government could reduce the effects of the digital divide and improve access to its services.

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.... [6]

4 Data can be kept secure by using the Secure Socket Layer (SSL)/Transport Layer Security (TLS) protocols when it is transmitted over the internet.

Describe the use of SSL/TLS to ensure data is kept secure.

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5 There are various methods of verification.

(a) Describe why checksum verification is used.

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(b) Describe a method of calculating a checksum.

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6 Describe these types of malware.

(a) Malicious bots ....

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(b) Rootkit ....

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(c) Virus ....

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7   Data can be collected by using a direct or an indirect data source.

Discuss the advantages and disadvantages of using direct data compared to indirect data.

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8 Sound editing software has a number of features that can be used to edit audio files.

(a) State **two** reasons why an audio clip may need to be trimmed.

Reason 1 ....

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Reason 2 ....

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[2]

(b) State **one** reason why separate audio clips may need to be spliced together.

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(c) Describe the term equalisation when applied to audio clips.

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9 Discuss the advantages and disadvantages of using a dialogue interface rather than a gesture-based interface.

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