



## Cambridge International AS & A Level

CANDIDATE  
NAME



CENTRE  
NUMBER

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CANDIDATE  
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### INFORMATION TECHNOLOGY

9626/11

Paper 1 Theory

October/November 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 Utility software is needed to maintain a computer system.

Explain why each of the following tasks is needed and how utility software performs each task:

- (a) disk formatting

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..... [3]

- (b) data compression

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- (c) disk defragmentation

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**2** Describe the following characteristics of mainframe computers:

(a) volume of input, output and throughput

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..... [3]

(b) security

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..... [3]





- 3** Describe how a company can use management information system (MIS) software to help run its business.

[6]

- 4** Relationships are used in relational databases.

- (a) Describe the following database relationships:

- (i) one-to-one

[1]

[1]

- (ii) one-to-many

[1]

[1]





- (b)** Describe how a many-to-many relationship could be created in a database.

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[3]

- 5** A scientist is going to use direct and indirect data sources to study the effects pollution is having on farmland.

- (a)** Explain what is meant by direct data sources. Your answer must include examples linked to the scenario.

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[3]

- (b)** Explain what is meant by indirect data sources. Your answer must include examples linked to the scenario.

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[3]

[Turn over]





**6** Explain the need for both validation and verification to ensure data is accurate.

[4]

[4]





7 Discuss the benefits and drawbacks of the use of a compiler to convert a computer program in a high level language into a low level language.

[8]





- 8 (a) Describe the purpose of **three** sensors that are needed in a microprocessor-controlled burglar alarm system.

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- (b) Explain how a microprocessor-controlled burglar alarm system works.

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- 9** A computerised system will be used to collect and monitor environmental data in mountainous areas.

Evaluate the use of monitoring technologies in this scenario.

[8]





- 10** A garage uses an expert system to diagnose faults in car engines.

Describe the components of this expert system.

[8]





**11** Describe the effects of the different methods of compression on audio quality.

[4]

[4]





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