



Cambridge International AS & A Level

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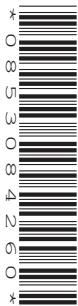


CENTRE
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INFORMATION TECHNOLOGY

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

[3]

(b) data compression

[3]

(c) disk defragmentation

[3]





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]





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.

[3]

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

[3]





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]





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