



# Cambridge International AS & A Level

CANDIDATE  
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## INFORMATION TECHNOLOGY

9626/12

Paper 1 Theory

October/November 2025

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 [ ].

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



- 1** A train timetable is published every six months.

State **three** factors that could affect the quality of this information.

1 .....

[3]

- 2** Describe how a control total is used to verify data.

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[3]



- 3** An expert system contains an inference engine and a knowledge base.

(a) Describe how the inference engine performs its role.

[4]

**(b)** Describe how a knowledge base is created.

[4]



- 4 Identify and explain **two** drawbacks of using a spreadsheet for computer modelling.

1 .....

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2 .....

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[4]

- 5 Lucia has written an algorithm in pseudocode to determine whether a number (X) is a factor of another number (Y).

X is a factor of Y if the result of  $Y/X$  is a whole number.

- The algorithm uses a WHILE...ENDWHILE statement to check whether X is greater than zero and that X is less than Y.
- If X is greater than zero and X is less than Y, the algorithm will output:
  - the values of X and Y
  - an appropriate message if X is a factor of Y
  - OR
  - an appropriate message if X is **not** a factor of Y.

In pseudocode `INT (W)` returns the whole number part of W.

```

INPUT X
INPUT Y
WHILE X>0 AND <=Y
  W←Y/X
  Z=INT (W)
  IF W=Z
    THEN
      PRINT X, " is a factor of Y"
    ELSE
      PRINT X, " is not a factor of ", Y
  ENDIF
ENDWHILE
  
```

Lucia has made **four** mistakes in her algorithm.



Identify **four** mistakes in the code. For each mistake, explain in detail what the code as written would achieve.

**Stating that the code would not work is not sufficient to gain any marks.**

Mistake 1 .....

.....

Mistake 2 .....

.....

Mistake 3 .....

.....

Mistake 4 .....

.....

[8]



- 6 Malware can be used to gather information to enable people to commit fraud.

- (a) Identify **two** other uses for malware.

1 .....

2 .....

[2]

- (b) Identify and explain **three** disadvantages of using anti-virus software to protect your computer from malware.

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[6]



**7** A company wishes to gather some information from employees.

- (a) Describe the process of organising face-to-face interviews.

[4]

[4]

- (b)** Justify the use of a relational database to store the information gathered.

[4]

[4]



- 8** There are two methods of file compression, one is Lossy the other is Lossless.

(a) Describe what is meant by Lossy compression.

[1]

**(b)** Describe what is meant by Lossless compression.

[1]

(c) Compare the impact on quality of video of using each of these methods of compression.



**9** Justify the uses of encryption for data that is stored on a pen drive.

[6]



10 Describe **four** characteristics of a mainframe computer.

1 .....

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2 .....

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3 .....

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4 .....

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[4]

11 Describe what is meant by the term FLOPS.

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[2]

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- 12** Describe how an operating system manages data on a hard disk.

[4]

[4]

- 13** Describe the effects of the digital divide on health services.

[6]





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