![Cambridge Assessment International Education]
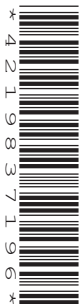
Cambridge International AS & A Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

INFORMATION TECHNOLOGY **9626/12**

Paper 1 Theory **February/March 2023**

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.

[Turn over

1   Data is collected and processed to become information. Many factors affect the quality of the resulting information.

(a) Describe what is meant by accurate information.

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.... [1]

(b) Describe how the use of interviews and questionnaires for collecting data may affect the accuracy of the resulting information.

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.... [6]

Online processing can be used when goods are purchased.

(c) Define what is meant by online processing.

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(d) Johann has previously registered with an online store.

Describe the steps he takes when purchasing goods from the online store.

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4

2   A linker is a type of system software used during the process of translating high level language programs to machine code.

Discuss the benefits and drawbacks of using a linker.

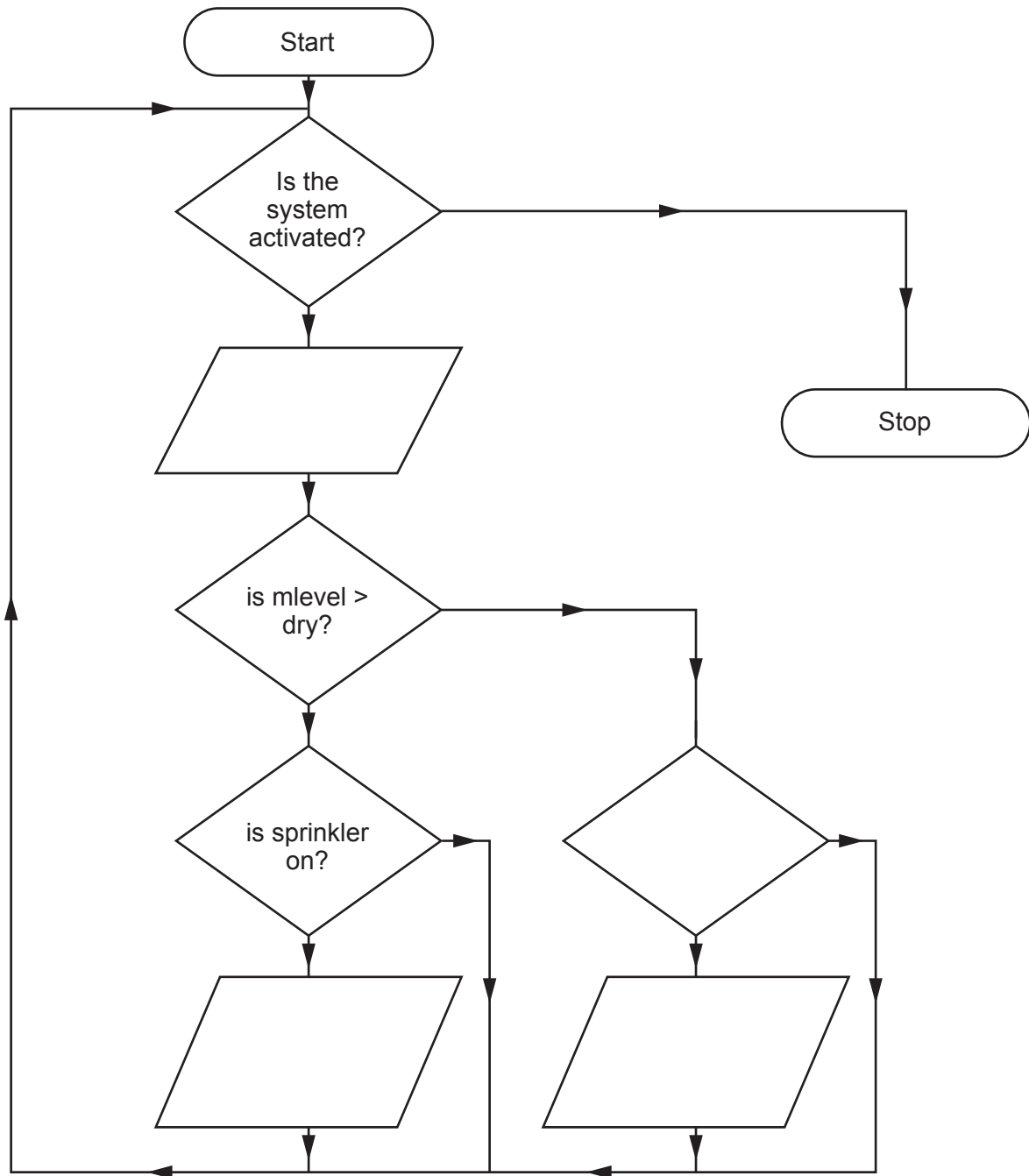...

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3 Most computer systems have a variety of utility software including anti-virus software.

Discuss the benefits and drawbacks of anti-virus software.

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4 Mark has a small glasshouse. He lives in a warm country where plants can die if they are left without water for too long. The glasshouse has a microprocessor controlled sprinkler system and a moisture sensor in the soil.

Complete this flowchart to show the processing required to control the level of moisture in the soil of the glasshouse. You may assume that a pre-set value, **dry**, has already been input so that the system can test if the amount of moisture in the soil has reached or fallen below a certain level.

The user activates the microprocessor system by pressing a switch.

(a) Complete the flowchart which inputs the moisture reading in the glasshouse and switches the sprinkler on and off according to this value. It also checks if the sprinkler is already on or off before attempting to switch it on or off.

[6]

(b) Flowcharts often contain subroutines.

(i) Draw the symbol used to represent a subroutine in a flowchart.

[1]

(ii) State what you would expect to see in the first box of a subroutine.

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5 Explain why encryption is needed.

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6   Sensors are used to measure physical variables.

(a) Describe these sensors and give an appropriate use in a monitoring system for each.

(i) Light ....

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(ii) Temperature ....

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(b) Sensors need to be calibrated before use.

Evaluate the different forms of calibration.

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7 Phishing is a method used by hackers to obtain banking information from computer users.

Explain the process of phishing.

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8 Describe how people in developing countries can be disadvantaged when trying to use online shopping.

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9 Describe what is meant by the malware terms.

(a) worm

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(b) Trojan

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10 Describe what is meant by the term open source file format. Include in your answer an explanation of why open source file formats are needed.

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12

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