Cambridge International AS & A Level

CANDIDATE NAME	

CENTRE NUMBER		CANDIDATE NUMBER	

INFORMATION TECHNOLOGY **9626/11**

Paper 1 Theory **May/June 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.

1 Encryption can be used to protect data.

(a) Define encryption.

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(b) Explain how intercepted data could be misused if it was not encrypted.

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.... [3]

2 Describe what is meant by a smart home.

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3 Explain why a compiler may not be suitable for translating a high level language program for use on different computer systems.

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4 The digital divide can exist between people in less industrially developed nations and those in more industrially developed nations.

(a) Explain why this digital divide exists.

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(b) Describe the effects of this form of digital divide.

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 [Turn over

5 D'Oliveira Inc. is a company which sells stationery products to many stores. The company uses a transaction file to keep a record of the number of products it has sold each month.

Part of a transaction file is shown. It contains:

- ProductID
- NumberSold (the number of that product sold in a particular month)

Part of the master file used by the company is also shown. It contains:

- ProductID
- Product (description of product)
- NumberinStock (how many of that product are left in stock)

The NumberinStock on the new master file is calculated every month by subtracting the NumberSold from the NumberinStock on the old master file.

Transaction file

ProductID	NumberSold
2210	6500
3356	7300
4268	2900
5690	4600

Master File

ProductID	Product	NumberinStock
1965	Folder wallets	9000
2210	Ring binders	12000
2976	Notepads	10100
3356	A4 paper	13450
4268	A3 paper	8800
5690	HB pencils	9200
6528	Pencil cases	11150
7649	Maths sets	8240

Fig. 5.1

(a) Identify the **two** processes that would have been performed on the transaction file before the master file could be updated.

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(b) List the steps involved when the master file is updated using the transaction file. Use the data shown in Fig. 5.1. Stop at the step where the third master file record is read.

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6 Back-up software is a type of utility software. A network manager wants to back up the data stored on a server.

(a) Describe, with reasons, the steps the manager takes when setting up this process.

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(b) Some of the data to be backed up consist of audio files. The network manager will compress these before starting the back-up process. Different methods of compression can be used.

Describe these methods giving the effects on the audio files of using each method.

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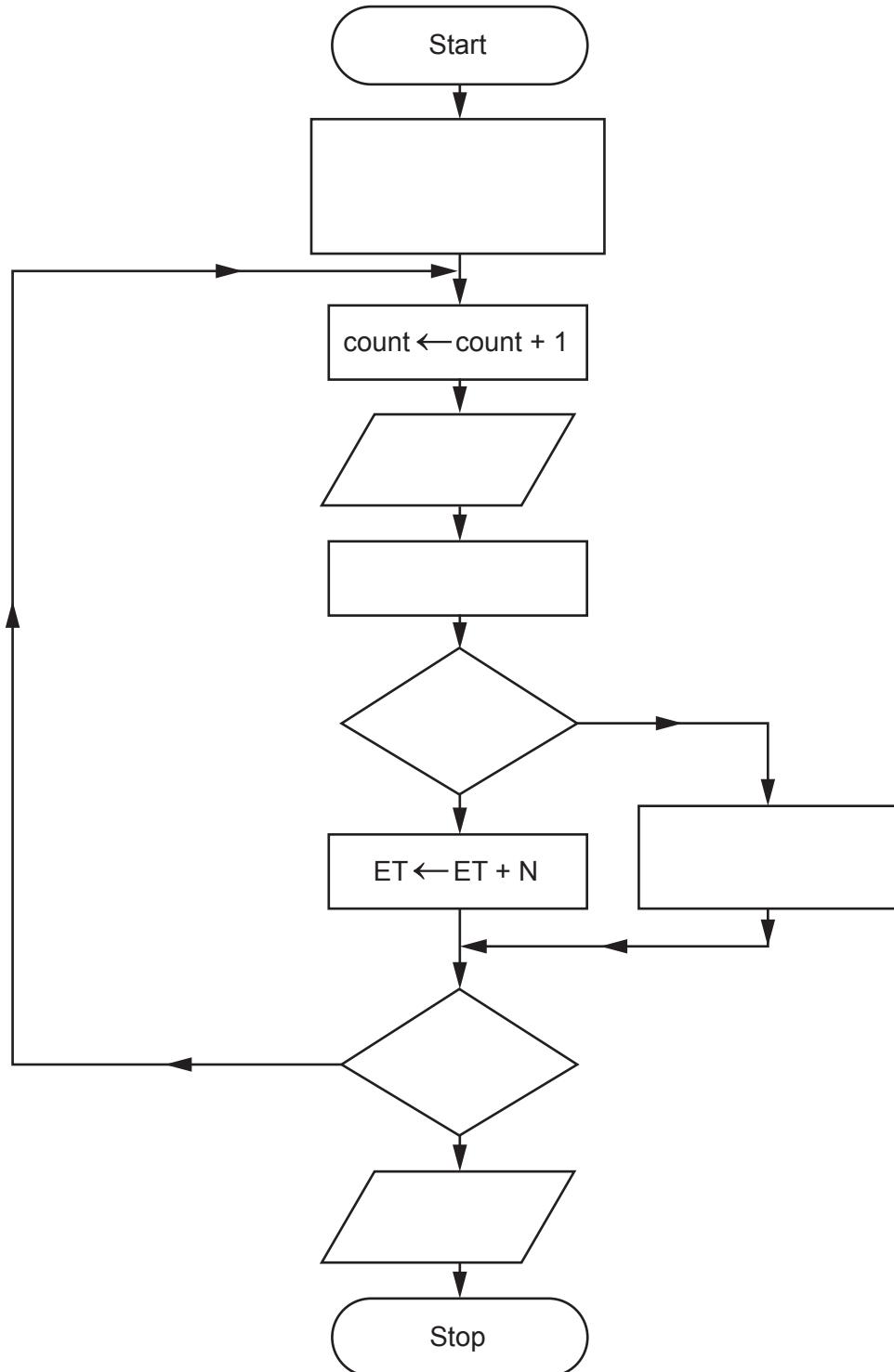**7** A computer system is used to monitor the level of pollution in the air.

Describe how the system would collect, process and display the data.

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8 Complete this flowchart which will allow the input of ten numbers.

- A number is even if the number divided by 2 is an integer.
- If a number (N) is odd, it will be added to the odd total (OT).
- If a number (N) is even, it will be added to the even total (ET).
- Both these totals will be output after the tenth number has been processed.

[8]

9 Vishing is a method used by fraudsters to obtain banking information from bank customers by phoning them.

Evaluate the methods that bank customers could use to prevent becoming a victim of vishing.

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10 The quality of sound produced from the data stored on an optical disk depends on the sampling resolution.

Describe what is meant by sampling resolution.

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11 Isabella is concerned about the amount of traffic in her local area. She is going to interview all the nearby families to discover if the amount of traffic is caused mainly by local families driving short distances. It will take her a week to collect the data.

Justify the use of direct sources such as interviews in this scenario.

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