



CANDIDATE
NAME

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9626/11

May/June 2022

1 hour 45 minutes

You must answer on the question paper.

No additional materials are needed.

- 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.

- 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 **16** pages. Any blank pages are indicated.

- 1 The processing of customer orders is an example of batch processing.

Describe, using customer orders as an example, what is meant by batch processing.

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..... [4]

- 2 Flight simulators are used to train pilots to fly modern jet aircraft.

Describe a typical flight simulator.

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..... [4]

- 3** When personal data is sent across the internet, it is often encrypted.

Analyse the encryption of personal data when it is sent across the internet.

[8]

- 4 A supermarket uses a computer to automatically update stock levels. Each record in the **Product file** contains the fields shown.

Product file

Bar_code	Product	Number_in_stock	Reorder_level	Reorder_quantity	Supplier_ID
5022476130067	Oaters	131	130	250	B671841
0100108097858	Tea	182	130	310	A296593
0201570244453	Beans	317	212	450	C562148

When the Number_in_stock of a product item falls to the Reorder_level, that product must be reordered. The Reorder_quantity is the number of items of the product that must be reordered.

The **Supplier file** contains the contact details of all the suppliers.

Supplier file

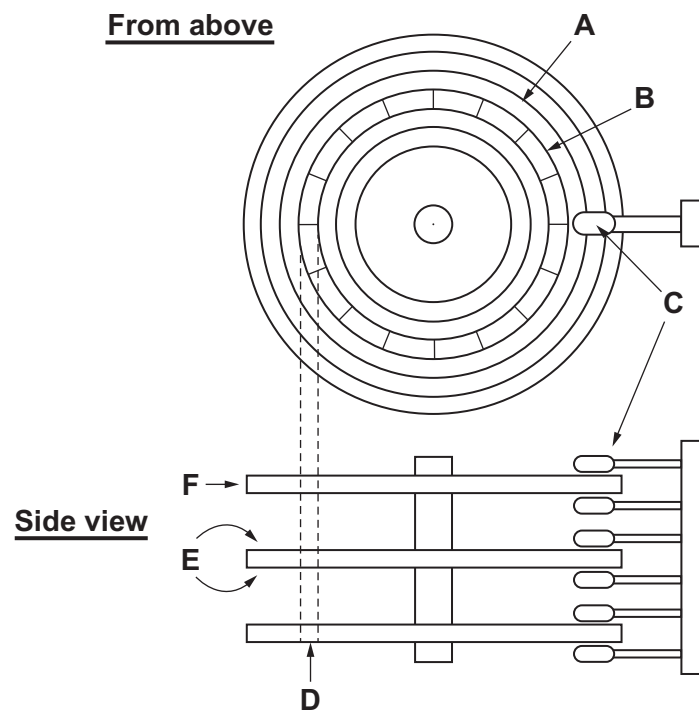
Supplier_ID	Supplier	Contact
B671841	J Sullivan	js@cmail.co.ke
A296593	Bluants	bluants@hmail.ug
C562148	Golan	golan@smail.eg

Only some of the records in the Product and Supplier files are shown.

Describe, using the Oaters record as an example, the steps the computer would follow to update the Product file after a point of sale terminal reads the bar code for a packet of Oaters.

[7]

5 Here is a diagram showing the component parts of a hard disk drive.



- (a) Describe the component parts of a hard disk drive. Refer to the labelled diagram in your answer.

[6]

(b) Explain what is meant by disk defragmentation and why it is needed when using hard disks.

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..... [4]

- 6 Many houses in cooler countries have central heating systems. In a central heating system, microprocessors are used to control the pump which sends water from the boiler to the individual heaters.

Complete the pseudocode algorithm to show the processing which takes place in this microprocessor-controlled central heating system. The algorithm must prevent attempting to switch the pump on when it is already on and attempting to switch the pump off when it is already off. You may assume `temperature` is the variable representing the actual temperature of the house and `preset` represents the required temperature of the house.

```
REPEAT
INPUT temperature
    IF temperature < preset
        THEN
```

[6]

- 7 Automatic re-calculation is one of the characteristics of spreadsheet models. This means it is not necessary to evaluate a formula every time you change it.

Describe other characteristics of spreadsheets that make them suitable for creating models.

[6]

- 8 Ruritania has just passed a law which will allow supermarkets to purchase customer information from banks, providing they anonymise it. Joanne, the owner of a supermarket, wishes to analyse the spending habits of people in the area very near to the supermarket. She can either use direct data sources or obtain the information indirectly from local banks.

Discuss the advantages and disadvantages to Joanne of obtaining the information indirectly from local banks.

[8]

- 9 One reason for the digital divide is that people living in rural areas are less likely to have high speed broadband compared to people in cities.

Explain why this particular aspect of the digital divide exists.

[6]

- 10** A farmer is concerned that the chemicals he is using to improve his crops are seeping into the local river. He has asked a local conservation group to investigate if this is the case. They will be using a computer and one set of sensors to monitor the level of pollution.

List examples of sensors the group will use and describe how they will be used with the computer to monitor the pollution level.

[6]

11 A gesture based interface is a type of user interface.

Describe the advantages of using a gesture based interface rather than other types of interface.

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