



Cambridge International AS & A Level

CANDIDATE
NAME

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NUMBER

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INFORMATION TECHNOLOGY

9626/13

Paper 1 Theory

May/June 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 A relational database has been created for customer orders.

The entities and attributes in the relational database are:

CUSTOMER	ORDER	PRODUCT
Cust_ID First_name Family_name Address_1 Town Zip_code	Order_code Cust_ID Date Product_ID Quantity	Product_ID Description Price

- (a) Identify the primary key in the CUSTOMER entity.

..... [1]

- (b) Identify the primary key in the ORDER entity.

..... [1]

- (c) Identify **one** foreign key in the ORDER entity.

..... [1]

- (d) Identify the relationship between the CUSTOMER and ORDER entities.

..... [1]





2 Unauthorised people can access personal data in different ways.

Describe what is meant by the terms:

- (a) pharming

[4]

[4]

- (b) smishing

[4]

[4]





3 In an expert system, the inference engine uses reasoning that consists of backward or forward chaining.

Explain the differences between backward and forward chaining.

[6]

4 Describe the terms absolute and relative cell replication, giving an example of each.

Absolute

.....

.....

.....

Relative
.....
.....
.....

[4]





- 5 A college uses a database to store student records. Each student has a unique ten-digit student number.

The database stores the examination scores of each student. The maximum mark in each examination is 100.

The database already has presence, existence and integrity validation checks built in.

Describe **three** additional validation rules, using student number and examination scores as examples. For each rule, give a different reason why it can still allow inaccurate data to be entered.

Rule 1

.....

Reason 1

.....

.....

Rule 2

.....

Reason 2

.....

.....

Rule 3

.....

Reason 3

.....

.....

.....

[6]





6 The environmental conditions around a chemical factory need to be monitored to make sure the environment is safe from pollution.

- (a) Describe how data logging could be used to help the factory owner monitor the environmental conditions around the factory.

[6]





(b) Discuss the advantages and disadvantages of monitoring the environmental conditions around the factory using a computer system rather than using manual methods.

[8]





7 Draw a program flowchart, in the space provided, that will allow an examination mark to be entered and then output an appropriate message giving the correct grade, as shown in the table. All marks are integers.

Mark	Message
85 or more	Grade A
70 or more	Grade B
50 or more	Grade C
Any other mark	Grade U





8 Explain why the following techniques could be used when editing a video.

(a) Creating credits

.....
.....
.....
.....
.....
..... [2]

(b) Extracting a still image

.....
.....
.....
.....
.....
..... [2]

(c) Exporting a video clip in a different file format

.....
.....
.....
.....
.....
..... [2]





9 A car park barrier opens automatically when a vehicle approaches and closes when the vehicle is clear of the barrier.

Describe how a microprocessor could be used to control the operation of the barrier.

[6]

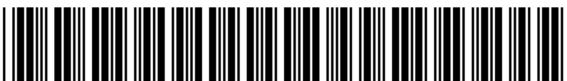




10 Describe the benefits and the drawbacks of using the csv file format to save data.

[8]





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