

Cambridge
International
AS & A Level

Cambridge International Examinations
 Cambridge International Advanced Subsidiary and Advanced Level

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APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY

9713/13

Paper 1

May/June 2016

1 hour 15 minutes

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

Do not use staples, paper clips, glue or correction fluid.

You may use an HB pencil for any diagrams, graphs or rough working.

DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

The number of marks is given in brackets [] at the end of each question or part question.

The businesses described in this paper are entirely fictitious.

This document consists of **17** printed pages and **3** blank pages.

Scenario 1

Questions 1, 2 and 3

Vegburger is a chain of fast-food restaurants. The management of the chain has decided that it is necessary to update its image.

As part of the update it has been decided to rebrand all stationery used by the chain. A master document using a corporate house style is to be designed from which all hard copy communications will be printed.

Vegburger keep stocks of various ingredients for the food used in the restaurants, in their warehouse. It is Li's job to ensure that the warehouse does not run out of ingredients. To help her in this task she uses two files, one of which is the INGREDIENT file and the other is the SUPPLIER file.

Li stores alterations to the files on a transaction file which she uses to update the other two files at the end of each day. After updating the files the INGREDIENT file is printed in alphabetic order of IngredientName. Sometimes Li needs to find the details about a particular ingredient quickly.

[6]

- 2 (a) The INGREDIENT file contains the following fields.

Field Name	Data Type
IngredientName	Alphanumeric
NumberInStock	Integer
Price	Currency
UseBy	Date
InStock	Boolean

Give a reason for the choice of data type for each of the fields.

IngredientName:

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NumberInStock:

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Price:

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UseBy:

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InStock:

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[5]

- Describe how the files can be used to create a relational database which would enable her to do this.

..... [5]

- [4]

(b) Describe the type of file access the transaction file uses and give a reason for your answer.

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..... [2]

Scenario 2**Questions 4 and 5**

Rose is a teacher in a college. She specialises in teaching science. The students in her classes use computers, each with a keyboard and a mouse.

Rose needs to be aware of safety issues when her students are using computers in the science laboratory.

As part of her job, it is necessary for Rose to store a large amount of personal data about her students. In addition, the college authorities store data about Rose. Both Rose and the college authorities are covered by the data protection legislation in the country.

Rose needs to teach her students to use email so that they can communicate with teachers and other students when doing project work at home.

- Each reason must be different.

..... [6]

- 1
- 2
- 3
- 4 [4

- (c) Describe **three** principles that could be included in the data protection legislation and for each one explain why it is necessary.

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..... [6]

- Describe other ICT skills that her students should understand in order to be able to use email appropriately.

[6]

Scenario 3**Questions 6 and 7**

Creamclot is a small company that produces cream for sale through a number of shops in local towns.

Jose, the manager of Creamclot, wants to expand the business countrywide.

Jose has employed Juanita, a systems analyst, to oversee the introduction of the new system. Juanita has decided that customers will telephone their orders to the company.

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graph LR; Customers([Customers]); OrderProcessed((Order processed)); OrderDetails[Order details]; Invoice[Invoice]; Customers -- "Order phoned" --> OrderProcessed; OrderProcessed -- "Order and invoice sent" --> Customers; OrderProcessed -- "Order details" --> OrderDetails; OrderProcessed -- "Invoice" --> Invoice;
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..... [5]

- (b) Before creating the new system, Juanita will need to design it. One element of the design will be specifying the required hardware and software.
Describe **four** other sections that will be found in the design and for each one explain why it is necessary.

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- (c) Describe **four** different types of software which would be used to produce different aspects of the new system. For each one state what it would be used for.

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- (a) (i)** Explain why magnetic tape is used for a sequential filing system.

(ii) Explain why hard disk storage is used for a random access filing system.

(b) Explain the advantages and disadvantages to Creamclot of using each of these systems.

..... [5]

Scenario 4**Question 8**

The Seaside hotel company owns hotels at many resorts along the coast. Because many of the rooms face the sun they can get very hot during the summer.

Each hotel room has an air conditioning system which is controllable by the guest who is staying in the room. The guest sets the temperature that they require. Each air conditioning unit is microprocessor controlled.

Enrico is the manager of one of the hotels. He decides to try to save money on the electricity bill. He plans to set the temperature for the whole hotel centrally so that guest rooms are always at the same temperature. The system will be controlled by a computer.

- [6]

- [2]

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