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Centre Number					Candidate Number				
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General Certificate of Education  
 June 2004  
 Advanced Subsidiary Examination



**COMPUTING**  
**Unit 2 Principles of Hardware, Software and Applications**

**CPT2**

Friday 11 June 2004 Afternoon Session

**No additional materials are required.**  
 You may use a calculator.

Time allowed: 1 hour 30 minutes

**Instructions**

- Use blue or black ink or ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** questions in the spaces provided. All working must be shown.
- Do all rough work in this book. Cross through any work you do not want marked.

**Information**

- The maximum mark for this paper is 65.
- Mark allocations are shown in brackets.
- You will be assessed on your ability to use an appropriate form and style of writing, to organise relevant information clearly and coherently, and to use specialist vocabulary, where appropriate.
- The degree of legibility of your handwriting and the level of accuracy of your spelling, punctuation and grammar will also be taken into account.

For Examiner's Use			
Number	Mark	Number	Mark
1			
2			
3			
4			
5			
6			
7			
8			
9			
Total (Column 1)	→		
Total (Column 2)	→		
TOTAL			
Examiner's Initials			

Answer **all** questions in the spaces provided.

1 (a) **Figure 1** is a listing of some files in a directory (folder).

Name	Size	Type
Wallpaper		File Folder
IEJIT	24 KB	HTML Document
JITALERT	1 KB	GIF Image
OFFLINE	3 KB	HTML Document
RELATED	1 KB	HTML Document
TIP	14 KB	HTML Document
TIPS	2 KB	GIF Image
WUICON1	1 KB	GIF Image
WUICON2	1 KB	GIF Image
WULOGO	14 KB	GIF Image

**Figure 1**

(i) From the list, give **one** example of a text file.

.....  
(1 mark)

(ii) From the list, give **one** example of a non-text file.

.....  
(1 mark)

(b) State **one** other type of non-text file that could be stored and processed by a computer system.

.....  
(1 mark)

3

2 Two friends start up a small business making educational videos. They start by downloading some editing software from the Internet.

(a) (i) Name the legislation that they might be contravening.

.....  
(1 mark)

(ii) How might they be breaking this law?

.....  
.....  
(1 mark)

(b) The friends distribute their videos in digital form so that they can be played directly through a computer system.

(i) State the most suitable storage medium for this purpose.

.....  
(1 mark)

(ii) Name **two** peripherals, excluding monitor, keyboard and mouse, that the computer system might use to play back the videos.

1 .....

2 .....

(2 marks)

5

3 In 2003, a certain City Council demanded a re-run of the 2001 census because, it said, up to 60 000 residents had been 'lost'. This would affect the Council's grant from the Government.

The loss of these residents could have been caused while the census data was being read and processed by the computer system. The system could have included methods to detect or prevent data loss or corruption. Give **two** methods, and explain how each would have been applied.

Method 1 .....

Applied .....

.....

Method 2 .....

Applied .....

.....

(6 marks)

6

**TURN OVER FOR THE NEXT QUESTION**

**Turn over ►**

4 (a) When setting up a relational database, entities, *attributes* and relations must be determined. A relational database is to be set up to hold details about sailing holidays.

(i) A relational database is more than a collection of tables. How are relationships implemented in a relational database?

.....  
.....  
(2 marks)

(ii) What is an attribute?

.....  
(1 mark)

(b) (i) What is the purpose of data validation?

.....  
(1 mark)

(ii) Give **one** example of a typical built-in validation control that might be applied to a sailing holiday database.

.....  
(1 mark)

5 Many people now have an Internet Bank account instead of, or in addition to, a more traditional 'High Street' account.

(a) (i) Give **two** advantages of banking via the Internet rather than a High Street branch.

1 .....  
.....  
2 .....  
.....  
(2 marks)

(ii) Internet banks claim that the way they operate can give customers other benefits that are not available from High Street branches of banks. Justify this claim by showing how **one** aspect of their operation could produce a benefit to customers.

.....  
.....  
(2 marks)



(b) An Internet bank, Internet Bank Corporation or IBC, gives its customers a user ID and a password to identify themselves when they log on.

(i) Suggest **one** additional measure, that could be included in IBC’s computer system, for confirming the identity of the customer when logging on to the bank’s Internet site.

.....  
(1 mark)

(ii) Suggest **one** measure that should be taken to ensure the security of any data being passed between the customer and the bank’s Internet site.

.....  
(1 mark)

(c) IBC wishes to be easily accessible by visually impaired customers. On their web site there is a page with the following statement.

“If you have difficulty viewing our website, you can change some of the options in your Internet browser.”

Suggest changes that could be made to **two** different aspects of the display on a monitor to make it more accessible for the visually impaired.

1 .....

2 .....

(2 marks)



**TURN OVER FOR THE NEXT QUESTION**

**Turn over ►**

6 A group of students is setting up a database of Counties in the United Kingdom and Northern Ireland, for a project. Here is part of one of the tables.

Name	Area in Sq Miles	Population	County Town	Region	Don't miss!
....					
Denbighshire			Denbigh	Wales	
Derbyshire	1015		Derby	East Midlands	Chatsworth
Devon	2594		Exeter	South West	Dartmoor
Dorset	1023		Dorchester	South Central	Lulworth Cove
Down			Downpatrick	Ulster	Mountains of Morne
Dumfries & Galloway	2510	150 000	Dumfries	Scotland	Glen Trool National Forest Park
....					

(a) The students discuss what *access rights* they should set up for the database.

Explain what is meant by access rights.

.....  
 .....  
 (2 marks)

(b) The students decide they should all have write access to the database, because they are still completing the data entry, as they find out more facts.

(i) Explain how this decision could cause a problem.

.....  
 .....  
 (2 marks)

(ii) How could this problem be handled?

.....  
 .....  
 (2 marks)

(c) The students need to find the counties in the East Midlands and West Midlands regions that have populations of over 200 000. Write an expression, using AND and OR as appropriate, for the search criteria they should use.

.....  
 .....  
 .....  
 (3 marks)

(d) The students could have set up this table in a spreadsheet. Give **one** advantage they gain by using a database instead of a spreadsheet.

.....  
(1 mark)

(e) If the students had stored the data in a file of records instead of in a database, they would have had to decide whether to use fixed length or variable length records. If they had chosen variable length records:

(i) how would storage space be saved?

.....  
.....  
(1 mark)

(ii) what additional data would need to be stored?

.....  
.....  
(1 mark)

○  
—  
12

**TURN OVER FOR THE NEXT QUESTION**

**Turn over ►**

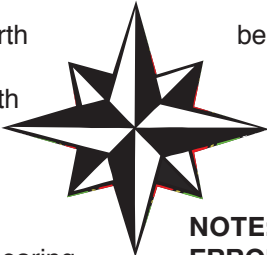
7 The word processed document in **Figure 2** was produced by a student as part of a project.

A T Someone page 1 Class A3

BEARINGS – TYPES OF BEARINGS

As there are three types of North points, there are 3 kinds of bearings, according to the North point from which they have been measured:

1. A Magnetic Bearing. This bearing is taken with a compass (an accurate compass needle always points towards MAGNETIC NORTH).
2. A Grid Bearing. This bearing is measured on a map with the Silva compass used as a protractor or using your Pathfinder Protractor.
3. A True Bearing. This bearing cannot be measured directly, but must



be calculated from the other two. However, this can be ignored for practical map reading purposes.

**NOTE: INDIVIDUAL COMPASS ERROR (ICE)**  
The accuracy of each individual compass is subject to error, it is important that you should check your own compass to establish the INDIVIDUAL COMPASS ERROR (ICE), do this by checking it against other compasses. Having done so make a note of it on your compass base with a small sticky label, don't forget to allow for it.

a:\compass\bearings.doc 06/03/03 AT 13:24

**Figure 2**

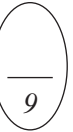
- (a) (i) Some of the items on this page of the project could have been set up to update automatically. List **three** of these items.
- 1 .....
- 2 .....
- 3 ..... (3 marks)
- (ii) What text formatting has been applied to the graphic?
- ..... (1 mark)
- (iii) Item 2, 'A Grid Bearing', has inconsistent formatting. What is wrong with it?
- ..... (1 mark)



(b) *a:\compass\bearings.doc* is the full file pathname of this document. What information is provided by **each** of its parts?

a: .....  
compass .....  
bearings .....  
doc .....

(4 marks)



8 The Information Commissioner has said that the public is not sufficiently aware of how much data is held on each person.

(a) A bank or building society would hold data about law abiding citizens. Give **three** further distinct examples of types of organisation which would hold such personal data. For each, give **one** piece of data held, in addition to name, address, telephone number and date of birth. Your data for each type of organisation should be different.

Organisation 1 .....  
Data held .....  
Organisation 2 .....  
Data held .....  
Organisation 3 .....  
Data held .....

(6 marks)

(b) The recording, processing and use of personal information is governed by legislation. Name this legislation and state **one** principle of this legislation that relates to the content of the personal data held and **one** that relates to who should have access to it.

Name .....  
Content .....  
.....  
Access .....  
.....

(3 marks)



Turn over ►

9 One of the roles of an operating system is the *management* of hardware resources.

(a) (i) What does ‘management’ mean in this context?

.....  
.....  
(2 marks)

(ii) List **two** distinct types of resource that would be managed by a typical stand-alone computer operating system.

1 .....

2 .....

(2 marks)

(b) Explain **one** other role of an operating system.

.....  
.....  
(2 marks)

(c) Give **two** tasks that an operating system for a computer network will have in addition to the tasks of an operating system for a stand-alone computer.

1 .....

2 .....

(2 marks)

**END OF QUESTIONS**

**THERE ARE NO QUESTIONS PRINTED ON THIS PAGE**

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