

# Examination Questions June 1999

## IGCSE Cambridge

1

Explain, using examples if appropriate, the meaning of these computer terms:

(a) random access memory (RAM) .....[1]

(b) fax.....[2]

(c) validation.....[2]

(d) user documentation .....[2]

(e) interrupt.....[2]

(f) virtual reality .....[2]

2 Describe **two** differences between source code and object code.

.....[2]

3 State **three** tasks that an operating system does for the user.

1.....  
.....  
2.....

.....  
3.....  
.....[3]

4 (a) Hackers gain illegal access to computer systems and may change and copy data.

State **two** effects of computer hacking.

1 .....  
.....  
.....  
.....[2]

(b) State **two** ways that users can protect their computer systems from hacking.

1 .....  
.....  
2 .....  
.....[2]

5 (a) Describe **one** precaution that should be taken against loss of data in a batch processing system.

.....  
.....[1]

(b) State **two** reasons why batch processing is more appropriate than real-time processing for dealing with electricity bills.

1.....  
.....  
.....  
2.....  
.....[2]

6 The following spreadsheet shows the destination of people who travelled in Speedwell Taxis during one week.

	A	B	C	D	E	F
1		School	Shops	Station	Other	Total
2	Monday	6	4	2	4	16
3	Tuesday	4	3	3	4	14
4	Wednesday	6	5	3	6	20
5	Thursday	5	6	1	4	16
6	Friday	3	7	4	6	20
7	Saturday	4	6	6	8	24
8	Sunday	0	2	3	7	12
9	Total	28	33	22	39	122
10	Percentage	23	27	18	32	100
11						

- (a) Circle and clearly label on the diagram a cell which should contain a
  - (i) label,
  - (ii) value,
  - (iii) formula. [3]
  
- (b) Shade on the spreadsheet the cells which would be needed to produce a labelled pie chart showing the number of people travelling to the station that week. [2]
  
- (c) Describe two more columns that could be added to the spreadsheet to enable extra calculations to be done.

1 .....

.....

2 .....

.....[2]

7

A school office sells stationery items to pupils. A database is used to keep details of the stationery stock. Part of the database is shown below.

CODE	ITEM	INSTOCK	SOLD	ONORDER	PRICE(\$)
C301	Floppy disk	24	16	20	1.5
G101	Rubber	16	14	10	1
G102	Pen	18	22	20	2
G103	Pencil	5	25	30	1
M101	Protractor	8	12	20	1.5
M202	Compass	8	10	20	2

(a) Suggest two more fields that could be used in this database.

- 1 .....
- 2 ..... [2]

(b) List the ITEMS output if the following search condition is used.

(CODE contains "M") OR (INSTOCK < 15)

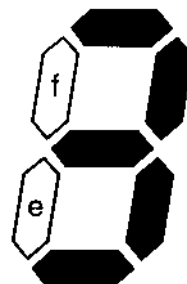
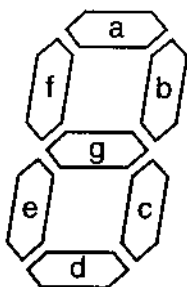
- .....
- .....
- ..... [3]

(c) Describe how you would sort the records into alphabetical order of ITEM field.

- .....
- .....
- ..... [3]

8

A calculator uses a 7-bit display as output.



Data is coded 0 for off and 1 for on. For example the digit three is

a	b	c	d	e	f	g
1	1	1	1	0	0	1

(a) What is the 7-bit binary code for the digit five?

.....[2]

(b) What word is displayed with the following set of bit patterns?

a	b	c	d	e	f	g
0	1	1	0	1	1	1
1	0	0	1	1	1	1
0	0	0	1	1	1	0
0	0	0	1	1	1	0
1	1	1	1	1	1	0

.....[4]

(c) Calculators and watches use a digital display.

State **one** other device where the output from the processor is to a digital display.

.....[1]

10

A hospital uses a computer system to store details about the patients.

(a) List three fields that would be in a patient's record, in addition to their name and address.

1 .....

2.....

3.....[3]

(b) The doctors read the patient medical histories on their computer screens before treating the patients.

(i) Describe two checks that should be done by a doctor to make sure that they have the correct patient record on the screen.

1.....

.....

2.....

.....[2]

(ii) State the type of file access that would be used by this system and give a reason why.

file access .....

.....

reason why .....

.....[2]

(c) Patient records will need to be amended, deleted and inserted. Give an example of why each of these would need to be done.

amended .....

.....

deleted .....

.....

inserted .....

.....[3]

(d) Describe three data protection laws that may apply to patient data.

1 .....

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2 .....

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3.....

.....[3]

(e) Describe **two** additional tasks that the hospital computer could do.

1 .....

.....

2.....

.....[2]

11

Students now use computer-based information retrieval systems to view data for topics they are studying rather than using text books.

(a) State two advantages to students of being able to do this.

- 1.....  
.....
- 2.....  
.....[2]

(b) Describe **two** ways of reducing the cost of obtaining such computerised information.

- 1.....  
.....
- 2.....  
.....[2]

12

A craftsman is using computer-aided design (CAD) software to produce a new design for a teapot.

(a) State three suitable input devices other than a keyboard and a mouse.

- 1.....  
.....
- 2.....  
.....
- 3.....  
.....[3]

(b) State three features of the CAD software that make it suitable for designing the teapots.

- 1.....  
.....
- 2.....  
.....
- 3.....  
.....[3]

13

An on-line computer system is being used to control the traffic lights at a busy crossroads in a large town. Data about the flow of traffic is collected by sensors.

(a) (i) Name two types of sensor used.

1.....

2 .....[2]

(ii) Explain how the collected data would be converted for computer storage.

.....

.....

.....[2]

(b) Describe the computer processing which should take place in order to keep the traffic flowing smoothly.

.....

.....

.....[2]

(c) Give **two** reasons why this on-line control system could fail to work.

1 .....

.....

2.....

.....[2]



14 Read this algorithm.

```
Value = 0
Next-value = 0
input Value
input Next-value
while Next-value is not equal to zero do
    if Next-value is greater than Value then
        Value is equal to Next-value
    endif
    input Next-value
endwhile
output Value
```

(a) What is the output if the following numbers are input.

5, 4, 8, 3, 0, 23.

.....[2]

(b) Write a modified algorithm to solve the same problem but always end after four numbers have been input.

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.....[5]