

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)

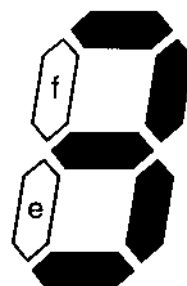
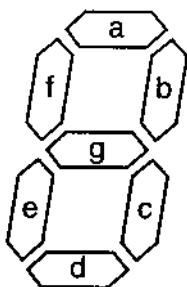
-
-
- [3]

(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

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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.....
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- 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.....
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- 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.

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.....[2]

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

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.....[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]