CANDIDATE
NAME

CENTRE
NUMBER

CANDIDATE
NUMBER

INFORMATION TECHNOLOGY   **0418/01**

Paper 1   **October/November 2007**

2 hours

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.
You may use a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES

Answer **all** questions.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

For Examiner's Use

This document consists of **16** printed pages.

[Turn over

1 Name the objects **A**, **B**, **C**, **D** and **E** using the words from the list.

A   **B**   **C**

D   **E**
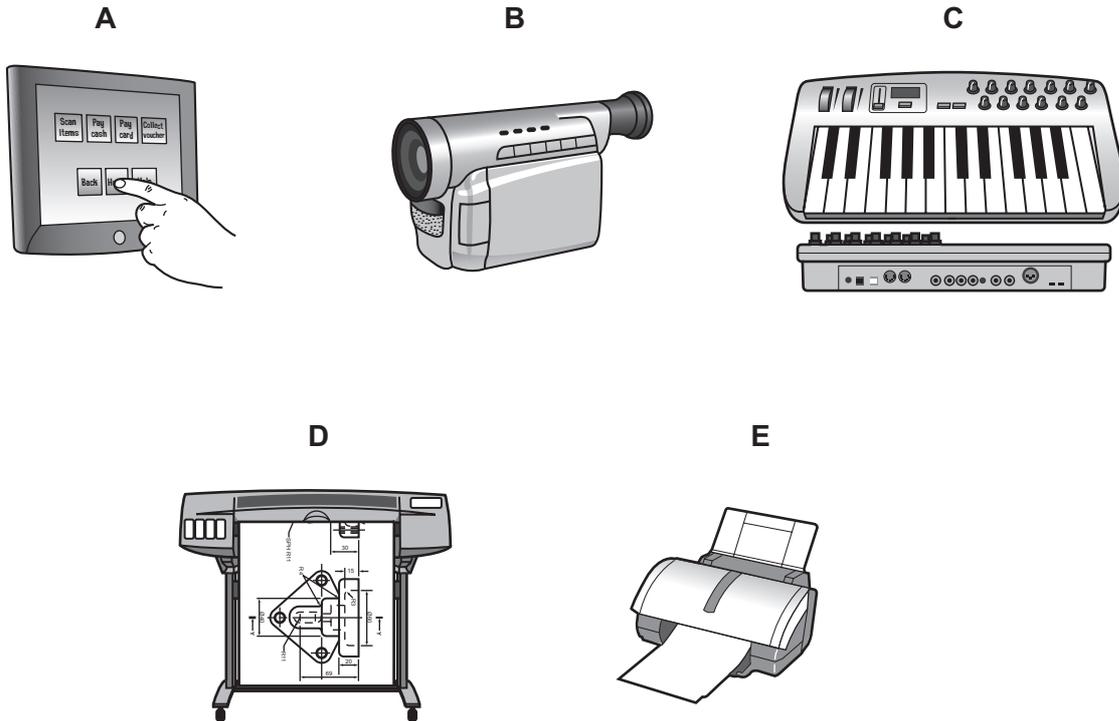
Joystick	Microphone	Midi interface	Monitor
Mouse	Plotter	Printer	Processor
Speaker	Touchscreen	Video camera	Web cam

A ....   B ....

C ....   D ....

E ....

[5]

2 Ring **two** storage devices.

CD ROM drive	Memory stick	Mouse
Speaker	Temperature sensor	Trackerball

[2]

3 Draw **five** lines on the diagram to match the computer application to the user.

Application   User

CAD   a bank worker

MICR   an examination paper marker

OMR   a shop worker

Touch screen   a payroll office worker

Batch processing system   an aircraft designer

[5]

4 For each type of network fill in the communication lines.

(a) Ring network
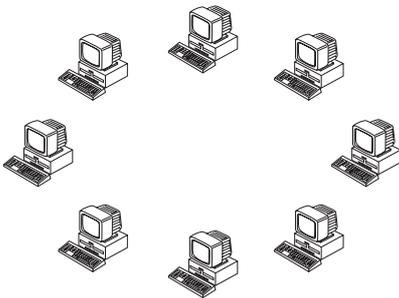
(b) Star network

(c) Bus network

[4]

5 A floor turtle can use the following instructions:

INSTRUCTION	MEANING
FORWARD n	Move n mm forward
BACKWARD n	Move n mm backward
LEFT t	Turn left t degrees
RIGHT t	Turn right t degrees
PENUP	Lift the pen
PENDOWN	Lower the pen

Complete the set of instructions to draw these shapes by filling in the blank lines.

PEN DOWN

LEFT 90

FORWARD 30

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[5]
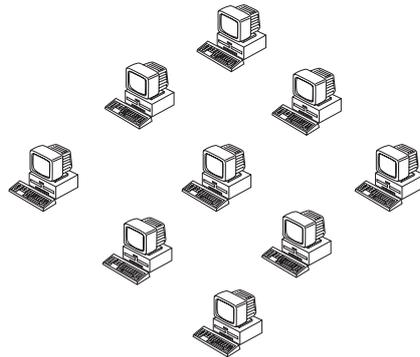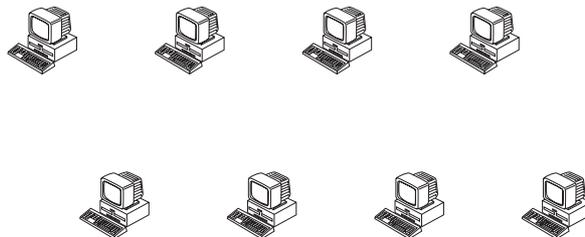
6 Tick **true** or **false** next to each of these statements.

	True	False
Use of an anti-glare screen can help to prevent headaches.	☐	☐
DTP would be used to monitor a patient's condition in a hospital.	☐	☐
Control software is used with computerised traffic light systems.	☐	☐
MICR is used for reading data from pencil marks on a form.	☐	☐
Floppy discs hold more data than memory sticks.	☐	☐

[5]

7 Complete each sentence below using **one** item from the list.

A bank cheque	**A dot matrix printer**	**A DVD**
A floppy disc	**A laser printer**	**A monitor**
A mouse	**An OMR sheet**	**A trackerball**

(a) .... is an example of an optical storage medium.

(b) .... is an example of a magnetic storage medium.

(c) .... is an output device which produces high

quality hard copy.

(d) .... is an input device used mainly by people with

disabilities.

[4]

8 A brand new hospital will be opening shortly. The management of the hospital requires an up to date computer system. They have employed a systems analyst to help produce the system.

(a) The systems analyst will need to design a patient record system. The data structure and user interface have already been designed.

Describe **three** other items that will need to be part of the design of the new system.

1 ....

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2 ....

....

3 ....

.... [3]

(b) The systems analyst will also design a medical staff record system. She will need to produce a screen display which the hospital administrators could use to read details of a member of staff.

Design a suitable output format for displaying the details of **one** member of staff.

[5]

(c) Having designed the system it will need to be implemented. Part of the implementation will be using test data with the system.

Describe the **three** types of test data.

1 ....

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2 ....

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3 ....

.... [3]

(d) As well as the patient and staff record systems the hospital wants to have a medical diagnosis expert system.

Describe how the systems analyst will create such a system.

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.... [5]

(e) Name **two** other uses of expert systems.

1 ....

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2 ....

.... [2]

(f) The hospital will also want to use a computer to monitor a patient's progress.

Name **three** analogue variables that it will need to measure.

1 ....

....

2 ....

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3 ....

.... [3]

(g) Although sensors will be used to measure these variables the computer cannot read the data directly.

What device is needed to convert this data and why is it needed?

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.... [3]

(h) Give **three** reasons why the hospital plans to use computers and not nurses to constantly monitor critically ill patients.

1 ....

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2 ....

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3 ....

.... [3]

9 A shop owner uses a spreadsheet to calculate his profits. This is part of the spreadsheet.

	A	B	C	D	E	F	G
1	Producer	Food type	Number in stock	Cost Price	Selling Price	Profit	Total profit
2	Logekks	Potato flakes	123	$2.30	$2.90	$0.60	$73.80
3	Squarebranch	Chocolate bar	158	$0.75	$0.95	$0.20	$31.60
4	Roofs	Beefburgers	135	$1.25	$1.55	$0.30	$40.50
5	Kapats	Gravy	89	$3.20	$3.95	$0.75	$66.75
6	Startle	Yogurt cream	119	$1.50	$1.85	$0.35	$41.65
7							
8		Total in stock	624		Overall profit		$254.30

(a) Give the cell reference of the cell that contains 89.

.... [1]

(b) Give the cell reference of a cell that contains text data.

.... [1]

(c) Write down the formula which should go in cell F2.

.... [1]

(d) Write down the formula which should go in cell C8.

.... [1]

(e) A similar formula should go in cell G8. Describe how somebody could get this formula in G8 without typing it in.

....

....

....

.... [2]

(f) This is an example of a financial model.

Give **two** examples of computer models, other than financial models.

1 ....

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2 ....

.... [2]

10 A company has many branches throughout the country. Rather than organising conferences at hotels it uses video conferencing to bring its workers together.

(a) Explain what is meant by video conferencing in terms of:

(i) the hardware required

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....

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.... [2]

(ii) how it works

....

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....

.... [2]

(b) Give **two** disadvantages of video conferencing compared with conventional conferencing.

1 ....

....

2 ....

.... [2]

11 Many schools use both an Intranet and the Internet.

Give **three** differences between an Intranet and the Internet.

1 ....

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2 ....

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3 ....

.... [3]

12 Since the invention of the microprocessor many labour saving devices have been introduced into the home.

(a) Apart from home computers, give **two** examples of these microprocessor controlled labour-saving devices.

1 ....

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2 ....

.... [2]

(b) Describe the effects these devices could have on a person's lifestyle.

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.... [4]

13 Below are three statements about methods of implementation of a new computer system. Tick whether they are **true** or **false**.

	True	False
Parallel running allows you to have a backup system		
Direct changeover requires twice as many workers to employ		
Phased implementation is a quicker method than direct changeover		

[3]

14 A house has a burglar alarm system. Describe the inputs, outputs and processing involved in such a system.

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.... [6]

15 A school has two separate computer networks. One is used for keeping pupil and staff records. The other is for pupils to use in lessons to help with their learning and also to store their work.

(a) The head teacher does not want to have the two networks connected because he is worried that personal data could be misused.

Describe **three** ways in which personal data might be misused.

1 ....

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2 ....

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3 ....

.... [3]

(b) In order to prevent data from being misused he will control access to the pupil and staff record systems. Describe how he can do this.

1 ....

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2 ....

.... [2]

(c) He will also ensure that the personal data is encrypted.

Describe how encryption will help protect the data.

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.... [2]

(d) He has asked some senior pupils to help in producing a printed school magazine for distribution to parents. The first edition will contain pictures of pupils in lessons together with some information about the lessons.

Describe how the pictures will be obtained and how the magazine will be created.

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.... [5]

(e) Some pupils have said that they would prefer to produce a web site for the school magazine.

Describe **three** features a web site would have which hard copy would not.

Feature 1 ....

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Feature 2 ....

....

Feature 3 ....

.... [3]

(f) Give **three** disadvantages of having a web site instead of hard copy.

Disadvantage 1 ....

....

Disadvantage 2 ....

....

Disadvantage 3 ....

.... [3]

(g) Pupils use the Internet quite frequently in their lessons to help them with their work.

Discuss the advantages and disadvantages of this as far as a pupil is concerned.

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.... [6]

16 Most travel agents use computers for their businesses. Each travel agent has a computer terminal which is connected on-line to a central computer.

    (a) Describe the computer processing which occurs when a person visits a travel agent to book a plane ticket.

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        .... [4]

    (b) Describe batch processing and give a reason why this would not be sensible method for booking tickets.

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        .... [3]