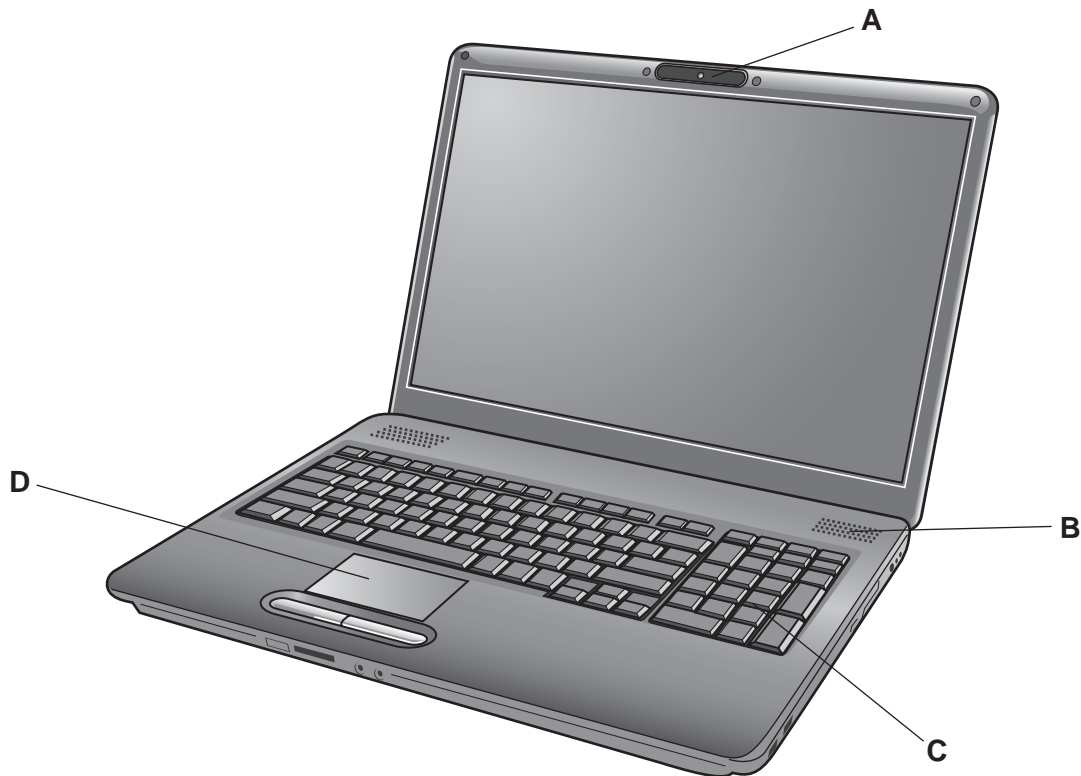


1 Name the devices **A**, **B**, **C** and **D** using words from the list.



digital camera

number pad

remote control

scanner

speaker

touch pad

trackerball

web cam

A

B

C

D

[4]

2 Ring **two** items which are output devices.

graphics tablet

keyboard

laser printer

motor

optical character reader

web cam

[2]

3 Tick **True** or **False** next to each of these statements.

	True	False
Computer programs are examples of software.		
A web authoring package is an example of hardware.		
An icon is a component of a command line interface.		
A mobile phone (cell phone) uses flash memory.		

[4]

4 Complete the following sentences using the **most appropriate** device from this list.

A graph plotter

A dot matrix printer

A laser printer

A buzzer

A multimedia projector

A trackerball

- (a) is used to print on continuous multipart stationery.
- (b) is used to output sound.
- (c) is used in CAD applications for very large printouts.
- (d) is used to produce high quality and high volume printouts.
- (e) is used to move a pointer on a screen.

[5]

5 Explain how a firewall could be used to secure the data in a computer connected to the internet.

.....

.....

.....

.....

.....

.....

.....

[3]

6 Ali wants to back up his data.

(a) Give **two** reasons why making backups is necessary.

1

.....

2

..... [2]

(b) Ali thinks that making backups will prevent his data from getting viruses.
Describe what a virus is and explain why Ali is wrong.

.....

.....

.....

.....

..... [3]

7 Describe **three** differences between a blog and a wiki.

1

.....

2

.....

3

..... [3]

8 Tick whether the following statements apply to **online** processing or **batch** processing.

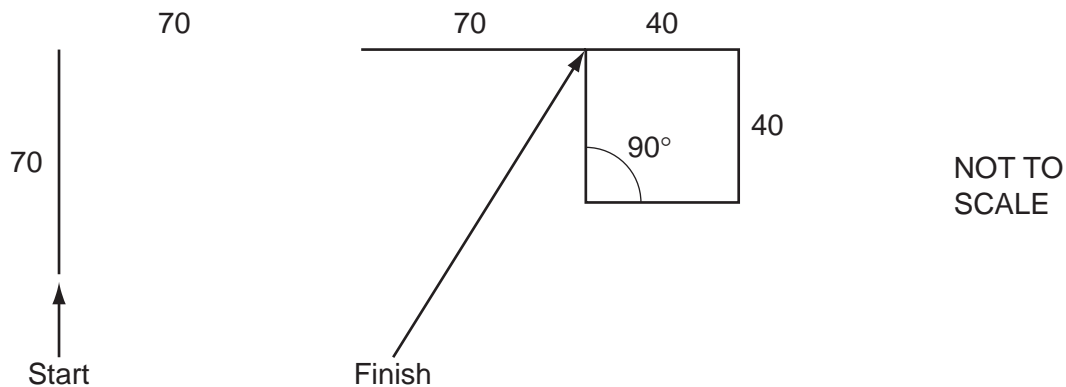
	online	batch
Paying for goods at an EFTPOS		
Producing electricity bills		
Booking a holiday		
Producing payslips		

[4]

9 A floor turtle can use the following instructions:

INSTRUCTION	MEANING
FORWARD n	Move n forward
BACKWARD n	Move n backward
LEFT t	Turn left t degrees
RIGHT t	Turn right t degrees
PENUP	Lift the pen
PENDOWN	Lower the pen
REPEAT n	Repeat the following instructions n times
END REPEAT	Finish the REPEAT loop

For
Examiner's
Use



Complete the set of instructions to draw this shape by filling in the blank lines.

PENDOWN
 FORWARD 70
 RIGHT 90

[8]

[5]

	✓
Take regular breaks from working at the computer.	
Do not overload electrical sockets.	
Make sure all cabling is securely tied.	
Sit with your back upright at all times.	
Always have a CO ₂ fire extinguisher in the room.	
Use a wrist rest when typing.	

[3]

12 A greenhouse is controlled by a microprocessor.

For
Examiner's
Use

(a) Other than a light sensor name **two** sensors used in the greenhouse.

1

2 [2]

(b) Explain why computers are unable to read the data directly from these sensors and name the device which would enable them to do so.

.....

.....

.....

.....

.....

..... [3]

(c) Describe how the microprocessor uses data from the light sensor.

.....

.....

.....

.....

.....

.....

.....

..... [4]

- 13** Computers are used in supermarkets at point of sales terminals. When paying for goods the customer inserts the bank card into the chip reader.

(a) Identify **three** items of data contained in the chip on a bank card.

- 1
- 2
- 3 [3]

(b) Describe **three** checks that would be carried out using information on the card before the bank is asked to authorise the transaction.

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

(c) Describe **five** steps which would be carried out by the computers at the supermarket and at the customer's bank to complete the transaction.

- 1
.....
- 2
.....
- 3
.....
- 4
.....
- 5
..... [5]

14 Mario has asked Louise, a systems analyst, to create a new database system for keeping records of books he sells in his bookshop.

- (a)** Louise will collect information about the existing system.
Describe **three** methods she would use to do this.

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

After collecting information, Louise noticed that Mario sells both non-fiction and fiction books in hardback and paperback. She also discovered that no books cost more than \$20. She wrote down some of the questions that customers ask, such as:

Have you got any non-fiction books by Arthur C Clarke?

Have you got the hardback version of 'Harry Potter and the Philosopher's Stone'?

Have you got any books for less than \$10?

- (b)** Complete the design table below filling in the field names and **most** appropriate validation checks to create a database which would answer these questions.

Field name	Validation Check
	none
	none
Price	

[7]

- (c) Identify **three** items of test data which could be used with the Price field giving reasons for your choice.

Item 1

Reason

.....

Item 2

Reason

.....

Item 3

Reason

..... [6]

- 15 (a) State what is meant by OMR and OCR.

OMR

OCR [2]

- (b) Compare and contrast the use of OMR, OCR and a keyboard as methods of data entry.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [6]

16 A company uses robots to manufacture cars.

(a) Tick **four** advantages to the company of using robots rather than humans to manufacture cars.

	✓
Robots are cheap to buy	
Running costs are lower as humans have to be paid wages	
Robots never need maintenance	
Humans cannot work continuously	
Robots can work in hazardous conditions	
There is lower productivity with robots	
Robots produce the same standard of finished product every time	
Humans have greater accuracy than robots	

[4]

(b) Describe **three** tasks that humans will have to do when robots are used to manufacture cars.

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

Page 2	Mark Scheme	Syllabus	Paper
	IGCSE – October/November 2012	0417	11

- 1 A Webcam B Speaker
C Number pad D Touchpad [4]

- 2 graphics tablet keyboard laser printer [1]

- motor optical character reader web cam [1]

3

	True	False	
Computer programs are examples of software	✓		[1]
A web authoring package is an example of hardware		✓	[1]
An icon is a component of a command line interface		✓	[1]
A mobile phone (cell phone) uses flash memory	✓		[1]

4

- (a) A dot matrix printer is used to print on continuous multi-part stationery [1]

- (b) A buzzer is used to output sound [1]

- (c) A graph plotter is used in CAD applications for very large printouts. [1]

- (d) A laser printer is used to produce high quality and high volume printouts. [1]

- (e) A tracker ball is used to move a pointer on a screen. [1]

5 Three from:

Monitors and controls incoming and outgoing data traffic
Helps to prevent malware getting into computer/from the internet
Prevents computer accessing undesirable/unauthorised sites
Prevents unauthorised computers using the internet accessing the computer
Keeps a list of undesirable sites/IP addresses
Keeps a list of acceptable sites/IP addresses
Warns you regarding threats/allows you to accept/reject downloaded programs [3]

Page 3	Mark Scheme	Syllabus	Paper
	IGCSE – October/November 2012	0417	11

6 (a) Two from:

Data could be corrupted on original medium
 Data could be accidentally amended/overwritten on original medium
 Data could be accidentally deleted from original medium
 Data could be maliciously deleted from original medium

[2]

(b) Two from:

Virus is a piece of programming code
 Which replicates itself...
 Can fill up storage medium making it unusable
 Deletes data/change data
 Makes software/operating system unusable

[2 max]

If the original medium has a virus the backup will have it as well/backup will have no effect on the hard disc so it is still susceptible to viruses

[1]

7 Three from:

Blog usually has a single author/ a Wiki usually has many authors
 Blog is usually in reverse chronological structure/ a Wiki has a structure determined by content and users
 Blog is usually personal/someone's opinion/ a Wiki is usually objective
 Can't edit a blog/ a Wiki can be edited/ Can only add comments to a blog

[3]

8

	Online	Batch	
Paying for goods at an EFTPOS	✓		[1]
Producing electricity bills		✓	[1]
Booking a holiday	✓		[1]
Producing payslips		✓	[1]

Page 4	Mark Scheme	Syllabus	Paper
	IGCSE – October/November 2012	0417	11

9

PENDOWN FORWARD 70
FORWARD 70 REPEAT 4
RIGHT 90 FORWARD 40
PENUP RIGHT 90
FORWARD 70 END REPEAT
PENDOWN

1 mark for each statement correctly placed

Other less economical solutions can gain full marks

[8]

10 Five from:

Benefits:

Can call meeting at short notice
No need to pay travelling expenses
Can work from home
Employees will save time travelling
Do not have to pay hotel expenses
Do not have to pay for conference room facilities
Safer as participants do not have to travel
Don't have to transport/carry equipment/lots of documents/documents don't get lost in transit

Four max.

Drawbacks:

Takes time/costs money to learn new technology/to be trained
Difficult to have international meetings because of time differences
Initial cost of hardware (and software)
Equipment can break down/power cuts can stop conference
Poor strength of signal/time lag/lip sync can be a problem/ connection can be lost
Loss of personal/social contact
Legal documents cannot be signed

Four max.

[5]

Page 5	Mark Scheme	Syllabus	Paper
	IGCSE – October/November 2012	0417	11

11

Take regular breaks from working at the computer		
Do not overload electrical sockets	✓	[1]
Make sure all cabling is securely tied	✓	[1]
Sit with your back upright at all times		
Always have a CO ₂ fire extinguisher in the room	✓	[1]
Use a wrist rest when typing		

12 (a) Two from:

Temperature
Humidity
Moisture
pH [2]

(b) Sensor measures analogue [1]
Computer works in digital [1]
Analogue to digital converter [1]

(c) Four from:

microprocessor compares light reading with preset value
if lower than pre-set value microprocessor sends signal to switch on light bulb
if higher than pre-set value microprocessor sends signal to switch off light bulb
process is continuous/ monitoring of sensors is continuous [4]

13 (a) Three from:

Card number
PIN
Expiry date
Type of card/issuer
Security number [3]

(b) Three from:

Card is valid/card number exists
Card is in date
PIN entered matches that on card
Checks if card is stolen [3]

Page 6	Mark Scheme	Syllabus	Paper
	IGCSE – October/November 2012	0417	11

(c) **Five** from:

Customer bank contacted
Bank looks up customer account number
Checks available balance
Checks daily (card) limit
If insufficient funds then transaction is rejected
If sufficient funds then transaction is authorised
Money deducted from customer account
Money credited to supermarket account

[5]

14 (a) Three from:

Examining documents of the current system
Distribute questionnaires to users of the current system
Interview users of the current system
Observing the current system/workers/users

[3]

(b)

Field name	Validation Check	
Book Title/Author	none	[1]
Author/ Book Title	none	[1]
Price	Range check	[1]
Fiction/Non-Fiction	Boolean	[1], [1]
Hardback/Paper back	Boolean	[1], [1]

(c) Any **three** matched pairs from

A value between 0 and 20
This is normal data and should be accepted by the system

0 or 20
This is extreme data and should be accepted by the system

Any number above 20 or text
This is abnormal data and should be rejected by the system

[6]

Page 7	Mark Scheme	Syllabus	Paper
	IGCSE – October/November 2012	0417	11

- 15 (a) Optical Mark Recognition/Reader [1]
Optical Character Recognition/Reader [1]

(b) Six from:

OCR and OMR are quicker methods of entering data compared to a keyboard
OMR has limited uses such as exam answers
OMR can be used in school registers
Optical Character Recognition is more prone to errors
OCR can be used by utility companies to read meters/to make entered text editable
Keyboard is used to input data manually/typing
Keyboard can be more accurate than OCR/less accurate than OMR
Keyboard and OCR can input text more easily than OMR
Pre printed stationery is required for OMR
Specialised equipment is required for OCR/OMR

[6]

16 (a)

Robots are cheap to buy	
Running costs are lower as humans have to be paid wages	✓
Robots never need maintenance	
Humans cannot work continuously	✓
Robots can work in hazardous conditions	✓
There is lower productivity with robots	
Robots produce the same standard of finished product every time	✓
Humans have greater accuracy than robots	

[4]

(b) Three from:

Programming robots
Changing robot arm tools/end effectors
Maintaining robots
Supervising operations
Quality control/inspecting finished cars

[3]

17 Three from:

installing malicious code on a PC or server
user is redirected to bogus website
user accesses websites which look authentic
but belong to the fraudster/hacker
are used to gain bank/personal details

[3]