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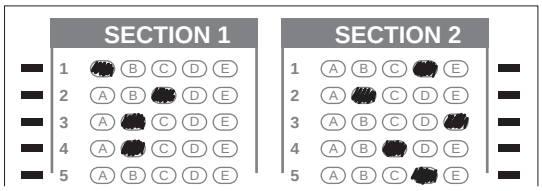
1 Name the methods used to represent information on **A**, **B**, **C** and **D** using the words from the list.

A

B

C



D

Bar code	**Chip**	**DVD ROM**	**Flash memory**
Graphics tablet	**Light pen**	**Magnetic stripe**	**Optical marks**

A ..... B .....

C ..... D .....

[4]

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

Buzzer	**Graphics tablet**	**Joystick**
Monitor	**Optical character reader**	**Web cam**

[2]

3 Tick **TRUE** or **FALSE** next to each of these statements.

	TRUE	FALSE
Computer programs are examples of hardware		
An internet browser is an example of software		
A pointer is used to select items in a command line interface		
A PDA is larger than a desktop computer		

[4]

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

A remote control	**A joystick**	**A keyboard**
A chip reader	**A graphics tablet**	**A microphone**

(a) ..... is used in the recording of voices for presentation software.

(b) ..... is used to control a multimedia projector.

(c) ..... is used to write a letter.

(d) ..... is used to read information from a bank card.

(e) ..... is used in a flight simulator.

[5]

5 Describe the role of a proxy server when a LAN is connected to the internet.

.....

.....

.....

.....

.....

..... [3]

6 Susan uses a memory stick to transfer her work from school to home. Give **three** reasons why memory sticks are often preferred to CDs for storing work.

.....

.....

.....

.....

.....

..... [3]

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[Turn over

7 A floor turtle can use the following instructions:

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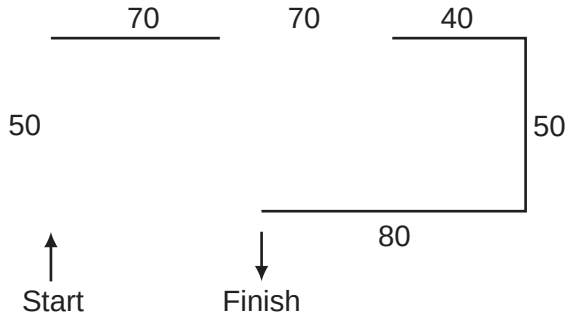
INSTRUCTION	MEANING
FORWARD *n*	Move *n* mm forward
BACKWARD *n*	Move *n* mm backward
LEFT *t*	Turn left *t* degrees
RIGHT *t*	Turn right *t* degrees
PENUP	Lift the pen
PENDOWN	Lower the pen



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

PEN UP ....

FORWARD 50 ....

RIGHT 90 ....

....

....

[5]

For Examiner's Use

8 Describe what is meant by a blog and a wiki.

(a) Blog .....

.....

.....

..... [2]

(b) Wiki .....

.....

.....

..... [2]

9 Tick **TRUE** or **FALSE** next to each statement to indicate if it is an example of online processing.

	TRUE	**FALSE**
Withdrawing money from an ATM		
Producing utility bills		
Booking a plane ticket		
Producing payslips		

[4]

10 Describe the three types of test data:

Normal .....

.....

Abnormal .....

.....

Extreme .....

..... [3]

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11 The head teacher of a school wants to build a weather station. She wants to use a computer to collect the results

(a) Describe **three** reasons why she wants to use a computer rather than allow students to collect the results.

1 .....

.....

2 .....

.....

3 .....

..... [3]

(b) The results will be stored in a spreadsheet. The head teacher wants a word processed report. The report will contain a description of the weather and will use the spreadsheet results.

Describe how the report will be created.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [5]

(c) Spreadsheet data is often used for modelling purposes. Give **three** reasons other than reducing danger why computer models are sometimes used rather than the real thing.

For Examiner's Use

1 .....

.....

2 .....

.....

3 .....

..... [3]

12 A supermarket uses POS terminals. The stock levels in the supermarket are updated automatically. Describe the steps involved in updating the stock level of a product when the bar code is read.

For Examiner's Use

.....

.....

.....

.....

.....

.....

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.....

.....

..... [5]

For Examiner's Use

13 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	Yoghurt 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 158.

.....

[1]

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

.....

[1]

(c) Write down the formula in cell F5.

.....

[1]

(d) Write down the formula in cell G2.

.....

[1]

(e) Formulae similar to that used in cell G2 have been used in cells G3 to G6. These were not typed. Describe how these were entered.

.....

.....

.....

.....

[2]

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[Turn over

For Examiner's Use

14 John owns a small company. He wishes to replace the existing computerised system with a new one. He has employed a systems analyst, Iqbal, to plan this.

(a) Iqbal will need to collect information about the existing system. Describe **three** methods he could use to do this.

1 .....

.....

2 .....

.....

3 .....

..... [3]

(b) Iqbal has completed the Analysis of the existing system. Describe **three** items of file structure which he would need to design for the new system.

1 .....

.....

2 .....

.....

3 .....

..... [3]

For Examiner's Use

(c) After a system is designed it will be implemented. Describe each of the following methods of implementation.

(i) Direct changeover

.....

.....

(ii) Parallel running

.....

.....

(iii) Phased implementation

.....

.....

(iv) Pilot running

.....

..... [4]

15 OMR, OCR and MICR are methods of direct data entry.
Describe each method, giving an example of an application where each might be used.

For Examiner's Use

(a) OMR .....

.....

.....

.....

.....

..... [3]

(b) OCR .....

.....

.....

.....

.....

..... [3]

(c) MICR .....

.....

.....

.....

.....

..... [3]

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For Examiner's Use

16 A company uses robots to manufacture cars.

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

.....

.....

.....

.....

.....

..... [3]

(b) Give **three** disadvantages to the company of using robots rather than humans to manufacture cars.

.....

.....

.....

.....

.....

..... [3]

17 Jasvir and her family have three computers in their home. She wants to connect the computers to create a network and access the internet. List **four** additional items she would need to set up this system. Your answers must include hardware and software.

1 .....

2 .....

3 .....

4 ..... [4]

For Examiner's Use

18 An automatic washing machine is controlled by a microprocessor.

(a) Other than a temperature sensor, name **two** sensors used in the machine.

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 temperature sensor.

.....

.....

.....

.....

.....

..... [3]

19 Describe **two** methods of data verification.

For Examiner's Use

1 .....

.....

.....

.....

2 .....

.....

.....

..... [4]

1 A Magnetic stripe (1)
B Chip (1)
C Optical marks (1)
D Bar code (1) [4]

2

Buzzer (1)	**Graphics tablet**	**Joystick**
Monitor (1)	**Optical character reader**	**Web cam**

[2]

3

	True	False	
Computer programs are examples of hardware		✓	(1)
An internet browser is an example of software	✓		(1)
A pointer is used to select items in a command line interface		✓	(1)
A PDA is larger than a desktop computer		✓	(1)

[4]

4 **(a) A microphone** is used in the recording of voices for presentation software [1]

(b) A remote control is used to control a multimedia projector [1]

(c) A keyboard is used to write a letter [1]

(d) A chip reader is used to read information from a bank card [1]

(e) A joystick is used in a flight simulator [1]

5 **Three** from:
Can act as a web server
Can act as a buffer (between internet and LAN)
Server passes on requests to the internet
Passes the requested web pages to individual computers
Can cache/store the webpages
Subsequent requests for that/those web page(s) are responded to more quickly
Can be used to monitor internet usage
Can block certain sites [3]

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6 **Three** from:
Can store more data
Easier to carry/more portable
Majority of computers have USB ports/many school computers don't have CD drives
Speed of access is quicker
Speed of data transfer is quicker
Pen drives are more robust/less prone to damage [3]

7
```
PENDOWN
FORWARD 70
PENUP
FORWARD 70
PENDOWN
FORWARD 40
RIGHT 90
FORWARD 50
RIGHT 90
FORWARD 80
```

1 mark for each pair of statements [5]

8 **(a)** **Two** from:
Web log
Personal journal/online diary
Owners' observations/opinions on a topic
Can have links to other sites
Others can post comments
Frequently updated by owner [2]

(b) **Two** from:
Allows users to create/edit web pages using a web browser
Many people can contribute/edit/update entries
Anyone can contribute so not to be taken as totally accurate
Holds information on many topics which can be searched [2]

9

	True	False	
Withdrawing money from an ATM	✓		(1)
Producing utility bills		✓	(1)
Booking a plane ticket	✓		(1)
Producing payslips		✓	(1)

[4]

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10 **Three** from:
Normal data – data within a (given) range/appropriate for that data type (1)
Abnormal data – data outside the range/of the wrong data type (1)
Extreme data – data on the boundaries of the range (1) [3]

11 **(a)** **Three** from:
Computer (readings) more accurate than students
Students might forget to take readings/readings can be taken at regular intervals
Students might be unavailable to take readings during school holidays
Computers can analyse the results immediately/ can produce graphs more quickly
Readings can be taken more frequently
Readings can be taken any time of day or night [3]

(b) **Five** from:
Save spreadsheet in suitable format
Create graphs
Load word processing software
Frames could be created
Insert spreadsheet/ import spreadsheet/copy and paste spreadsheet/embed spreadsheet
Insert/copy and paste graphs
Type in text/description of weather
Edit text/description of weather
Import/insert pictures
Format report [5]

(c) **Three** from:
Cheaper to make than the real thing
Real thing may represent too large a time scale (genetics etc.)
Real thing may be wasteful of materials
Real thing may be on too vast a scale
Easier to change data/variables
Costs less to change data/variables
The real thing may be impossible to access/create [3]

12 **Five** from:
The stock file is searched
Until a match is found with the entered bar code
The number in stock of the matching record is read
One/number purchased is subtracted from the number in stock
The number in stock is compared with the re-order number
If it is equal to/less than the re-order number then more goods are automatically re-ordered
The new value of number in stock is written back to the file
Next bar code is read [5]

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13 (a) C3 [1]

(b) Any one of A1:G1 or of A1:A6 or of B2:B6 or B8 or E8 or F8 [1]

(c) =E5–D5 [1]

(d) =C2*F2 or =C2*(E5–D5) [1]

(e) **Two** from:
Highlight/click on/select G2
Copy G2 and paste into G3:G6

Highlight/click on/select G2
Copy/Fill down to G6 [2]

14 (a) **Three** from:
Examining documents about the system
Distribute questionnaires to users of the system
Interview users of the system
Observing the system/staff [3]

(b) **Three** from:
Field name
Field type
Key field
Field length
Validation check/rules [3]

(c) Direct changeover – new system replaces existing system immediately/overnight (1)

Parallel running – new system runs alongside/together with existing system (1)

Phased implementation – new system is implemented part by part (1)

Pilot running – system is implemented in one branch/one office (at a time) (1) [4]

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15 (a) **Two** from:
Optical Mark Recognition
Pencil/pen marks are read by scanner/Reader
Position of marks are identified [2]

Exam papers/school registers/lottery/multiple choice questionnaires [1]

(b) **Two** from:
Optical Character Recognition
Text is read by scanner
image compared with characters stored in computer
Converted to text for use with other software [2]

Utility bill/turnaround documents/word processors/mail/passports/id cards/car number plates [1]

(c) **Two** from:
Magnetic Ink Character Recognition
characters read by magnetic reader
characters compared with characters stored in computer
Converted to text for entry into system [2]

Bank cheques [1]

16 (a) **Three** from:
Robots produce the same standard every time
Cost – once bought they do not have to be paid/fewer employees so lower costs
No industrial disputes
Greater productivity
Greater accuracy
Can work in hazardous/extreme conditions/can lift heavier loads
Robots don't take breaks/can work 24 hours a day 7 days a week [3]

(b) **Three** from:
Robots have to be reprogrammed when there is a small change/can't think for themselves
Robots need programming in order to be adaptable
Expensive start up costs – redundancy payments
Expensive start up costs – have to spend money on training workers to use robots
Expensive start up costs – buying of robots/programming of robots
Computer crash would halt production
Maintenance/repair costs can be expensive [3]

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17 *Hardware:*
Network cards
Modem/router
Hub

Software:
(Internet) browser
Firewall software
Anti-virus software
Anti-spyware software

Others:
ISP
Cables
Telephone line

Must have at least one hardware item and one software item to gain full marks. [4]

18 **(a)** **Two** from:
Pressure
Moisture
Motion [2]

(b) Computers work in digital [1]
Sensors send analogue data [1]
ADC [1]

(c) Compares temperature with pre-set value [1]
If temperature lower than preset value microprocessor switches on heater [1]
If temperature higher than/equal to preset value microprocessor switches off heater/does nothing [1]

19 **Two** from:
Visual verification/checking
Read through data on screen
Compare with source document [2]

Two from:
Double data entry
Data is typed in twice by one typist
Data is typed in by two operators
Computer compares versions
If different freezes/sounds buzzer [2]

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