

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

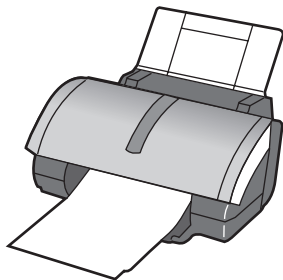
A



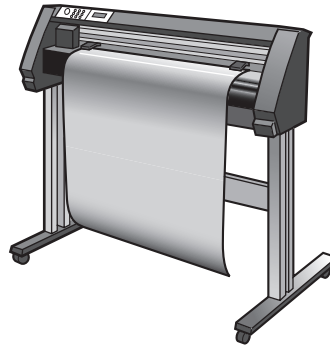
B



C



D



CRT monitor

Dot matrix printer

Graph plotter

Inkjet printer

Joystick

Multimedia projector

TFT monitor

Trackerball

A

B

C

D

[4]

2 Ring **two** items which are storage media.

Blu-ray disc

CD ROM

MICR

Motor

Sensor

Trackerball

[2]

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

| | TRUE | FALSE |
|---|------|-------|
| Control software is used to access the internet | | |
| A Graphical User Interface has windows, icons, menus and pointers | | |
| Laptop computers are popular because they are portable | | |
| Word processing software is used to monitor physical variables | | |
| Presentation software is used to create slide shows | | |

[5]

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

A bar code reader

A dot matrix printer

A graphic tablet

An inkjet printer

A joystick

A motor

OCR

A sensor

A trackerball

A web camera

- (a) is used to convert an image into text for use in a word processor.
- (b) is used to input moving pictures into a computer.
- (c) is used to output photographs.
- (d) is an output device used in robotics.
- (e) is used to read the ISBN from a book.

[5]

5 A school librarian is preparing a slideshow to explain to students how the library works. Tick **three** items she could use to prepare and show the slides.

| | |
|------------------------|---|
| | ✓ |
| A multimedia projector | |
| A dot matrix printer | |
| Measuring software | |
| A chip reader | |
| A remote control | |
| Presentation software | |

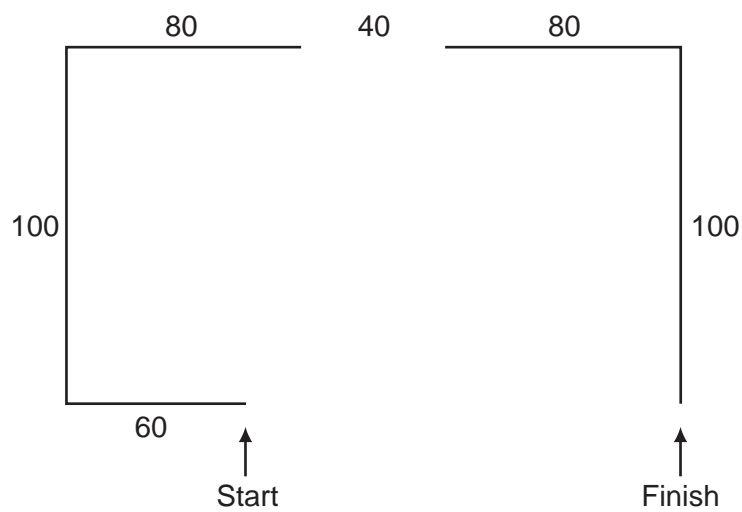
[3]

[Turn over]

6 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 |

For
Examiner's
Use



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

PEN DOWN

.....

LEFT 90

.....

FORWARD 60

.....

.....

.....

[5]

- 7 A school has a relational database consisting of a number of tables. One table contains each student's personal details and others consist of class lists for each subject. Every student has a unique identifying number. Tick whether the following statements are **TRUE** or **FALSE**.

| | TRUE | FALSE |
|---|------|-------|
| The identifying number is the foreign key in a class list table | | |
| The student's surname would be the primary key | | |
| In order to have relational tables there must be a primary key | | |
| The school's database is an example of a flat file | | |

[4]

- 8 Tick **TRUE** or **FALSE** next to each statement to indicate whether or not it is an example of real time processing.

| | TRUE | FALSE |
|---|------|-------|
| Payroll processing | | |
| Microprocessor controlled central heating | | |
| The use of robots in manufacture | | |
| Printing monthly utility bills | | |

[4]

- 9 The manager of a supermarket uses a database to store data about the food he sells. This is part of the database.

| Food type | Number in stock | Re-order (Y/N) | Last order received |
|---------------|-----------------|----------------|---------------------|
| Potato flakes | 123 | N | 23/10/10 |
| Chocolate bar | 158 | N | 25/10/10 |
| Beefburgers | 135 | N | 24/10/10 |
| Gravy | 89 | Y | 17/10/10 |

Write down the name of the field which is best suited to the data type given.

Boolean
 Date
 Alphanumeric
 Numeric

[4]

10 Multi-national companies often use video conferencing instead of face-to-face meetings.

Participants already have a PC with keyboard and mouse.

(a) Tick **four** items essential to a video conference.

| | |
|---------------------|---|
| | ✓ |
| Web cam | |
| Dot matrix printer | |
| Magnetic tape drive | |
| Modem/Router | |
| A trackerball | |
| Codec | |
| Broadband | |
| A telephone | |

[4]

(b) List **two** other items of hardware essential to a video conference.

- 1
- 2 [2]

11 Most PCs come with a hard disc drive. Give a reason why each of the following are also used with PCs.

Magnetic tape

.....

CD R

.....

DVD ROM

..... [3]

- 12 (a)** Doctors use expert systems to diagnose illnesses. There are a number of inputs and outputs used with such a system. List **four** examples of these.

1
 2
 3
 4 [4]

- (b)** Name one other use of expert systems.

..... [1]

- 13** Draw **four** lines on the diagram to match the use to its most **appropriate** input device.

| Use | Input device |
|---|-----------------|
| to input data at an information kiosk | Graphics tablet |
| to input data from a product in a supermarket | Touch screen |
| to input a PIN | Bar code reader |
| to input freehand drawings | Numeric keypad |

[4]

- 14** A small office consists of three rooms each of which has a PC with devices connected to it using cables. The office manager thinks the cables are a safety hazard and wants to remove them.

(a) Name **three** devices which could be connected to a PC using Bluetooth.

- 1
 2
 3 [3]

(b) The manager wants to connect the PCs to form a WLAN. Give **two** disadvantages of this compared to using cabling.

- 1

 2
 [2]

(c) The company's workers are concerned that their data may not be secure. Name and describe **three** methods, other than authentication techniques, which would help to keep the data more secure.

- 1

 2

 3

 [6]

15 (a) Describe **two** ways of reducing the risk of RSI.

1

.....

2

..... [2]

(b) There are sometimes safety risks associated with the use of computers. Describe **two** ways these risks can be minimised.

1

.....

2

..... [2]

16 Aysha wants to collect details of new customers for entry into a database. She has asked her friend Ali to design a paper-based data capture form for customers to complete.

Describe **four** features of the layout of the form that Ali will need to consider to make it easy for the customer to use.

1

.....

2

.....

3

.....

4

..... [4]

- 17** A school library is developing a new database of books. After the new system is developed, it will be tested.

*For
Examiner's
Use*

(a) Name **three** items of the system which would need to be tested.

- 1
2
3 [3]

(b) The school librarian is asking students to rate books which they have read and wishes to include these ratings in the database of books. Each rating will be between 0 and 10.

Below are three different types of test data. For each one name the type of test data it represents and explain why it is that type of data.

- (i)** 8
.....
.....
..... [2]

- (ii)** 10
.....
.....
..... [2]

- (iii)** 13
.....
.....
..... [2]

18 When a new system is implemented, different types of documentation are provided.

- (a)** Identify **two** items which would be found in both technical documentation **and** in user documentation.

.....

.....

.....

..... [2]

- (b)** Identify **two** items which would be found in user documentation but would **not** be found in technical documentation.

.....

.....

.....

..... [2]

19 (a) Explain what is meant by software copyright.

.....

.....

.....

..... [2]

- (b)** Explain how software manufacturers attempt to prevent copyright being broken.

.....

.....

.....

..... [2]

- [6]

- | | |
|---|--|
| 1 | |
| 2 | |
| 3 | |
| 4 | |

0417/12/O/N/10

| | | | |
|---------------|---------------------------------------|-----------------|--------------|
| Page 2 | Mark Scheme: Teachers' version | Syllabus | Paper |
| | IGCSE – October/November 2010 | 0417 | 12 |

Accept answers which have been crossed out UNLESS they've been replaced.

In numbered responses mark first answer only except if other answer spaces have been left blank
Do not accept generalised terms such as 'quicker', 'cheaper', 'more efficient' unless qualified.

- 1 A TFT monitor (1)
 B CRT monitor (1)
 C Inkjet printer (1)
 D Graph plotter (1) [4]

- 2 **Blu-ray disc (1)** **CD ROM (1)** **MICR**
 Motor **Sensor** **Trackerball** [2]

- 3
- | | True | False | |
|---|------|-------|-----|
| Control software is used to access the Internet | | ✓ | (1) |
| A Graphical User Interface has windows, icons, menus and pointers | ✓ | | (1) |
| Laptop computers are popular because they are portable | ✓ | | (1) |
| Word processing software is used to monitor physical variables | | ✓ | (1) |
| Presentation software is used to create slide shows | ✓ | | (1) |
- [5]

- 4 (a) **OCR** is used to convert an image into text for use in a word processor. [1]
- (b) **A web camera** is used to input moving pictures into a computer. [1]
- (c) **An inkjet printer** is used to output photographs [1]
- (d) **A motor** is an output device used in robotics [1]
- (e) **A bar code reader** is used to read the ISBN from a book. [1]

| | | | |
|---------------|---------------------------------------|-----------------|--------------|
| Page 3 | Mark Scheme: Teachers' version | Syllabus | Paper |
| | IGCSE – October/November 2010 | 0417 | 12 |

5

| | | |
|------------------------|---|-----|
| A multimedia projector | ✓ | (1) |
| A dot matrix printer | | |
| Measuring software | | |
| A chip reader | | |
| A remote control | ✓ | (1) |
| Presentation software | ✓ | (1) |

[3]

6

| | |
|---------|-----|
| RIGHT | 90 |
| FORWARD | 100 |
| | |
| RIGHT | 90 |
| FORWARD | 80 |
| | |
| PENUP | |
| FORWARD | 40 |
| | |
| PENDOWN | |
| FORWARD | 80 |
| | |
| RIGHT | 90 |
| FORWARD | 100 |

1 mark for each pair of statements

[5]

7

| | True | False | |
|---|------|-------|-----|
| The identifying number is the foreign key in a class list table | ✓ | | (1) |
| The student's surname would be the primary key | | ✓ | (1) |
| In order to have relational tables there must be a primary key | ✓ | | (1) |
| The school's database is an example of a flat file | | ✓ | (1) |

[4]

8

| | True | False | |
|---|------|-------|-----|
| Payroll processing | | ✓ | (1) |
| Microprocessor controlled central heating | ✓ | | (1) |
| The use of robots in manufacture | ✓ | | (1) |
| Printing monthly utility bills | | ✓ | (1) |

[4]

| Page 4 | Mark Scheme: Teachers' version | Syllabus | Paper |
|--------|--------------------------------|----------|-------|
| | IGCSE – October/November 2010 | 0417 | 12 |

- 9 **Boolean:** Re-order (Y/N) (1)
Date: Last order received (1)
Alphanumeric: Food type (1)
Numeric: Number in stock (1) [4]

10 (a)

| | | |
|---------------------|---|-----|
| Web cam | ✓ | (1) |
| Dot matrix printer | | |
| Magnetic tape drive | | |
| Modem/Router | ✓ | (1) |
| A trackerball | | |
| A codec | ✓ | (1) |
| Broadband | ✓ | (1) |
| A telephone | | |

[4]

- (b) **Two** from:
Microphone
Speakers/Headphones
Headset [2]

- 11 **Magnetic tape:** To make backups (1)
CD R: To transfer data/programs from computer to computer/to save user data (1)
DVD ROM: For companies to distribute software/movies/For users to install software/view multimedia (1) [2]

- 12 (a) **Four** from:
Questions appear on screen
Symptoms typed in
Answers to questions typed in
Further questions appear on screen
Suggested illnesses/diagnoses are output
Probabilities of illnesses are output [4]

- (b) **One** from:
Car fault diagnosis
Chess games
Mineral prospecting
Financial advice
Insurance risk assessment
Tax systems
Plant identification
Animal identification [1]

| | | | |
|---------------|---------------------------------------|-----------------|--------------|
| Page 5 | Mark Scheme: Teachers' version | Syllabus | Paper |
| | IGCSE – October/November 2010 | 0417 | 12 |

- 13 To input data at an information kiosk → Graphics tablet
 To input data from a product in a supermarket → Touch screen
 To input a PIN → Bar code reader
 To input freehand drawings → Numeric keypad [4]

- 14 (a) **Three** from:
 Mouse
 Keyboard
 Printer
 Mobile phone
 PDA
 Headphones
 Webcam
 Camera
 Microphone
 Laptop
 Scanner
 Graphics tablet
 Modem [3]

- (b) **Two** from:
 Increased risk of hacking
 Limited range of connection
 Likelihood of interference
 Reduced speed of connection (compared to cabled networks) [2]

- (c) **2 marks** for each pair (max 3) from:
 Encryption (1)
 Data becomes indecipherable to unauthorised users (1)
 Firewall (1)
 Prevents unauthorised computers having access to the network (1)
 Anti spyware (1)
 Removes spyware from computers (1)
 Keylogging detection (1)
 Enables user to delete software which hacker has planted (1)
 Antivirus (1)
 Removes viruses from storage media (1) [6]

- 15 (a) **Two** from:
 Take regular breaks
 Exercise wrists/fingers etc.
 Wristpads/wrist rests
 Ergonomic keyboards [2]

| | | | |
|---------------|---------------------------------------|-----------------|--------------|
| Page 6 | Mark Scheme: Teachers' version | Syllabus | Paper |
| | IGCSE – October/November 2010 | 0417 | 12 |

(b) Two from:

- Don't bring food and drink near computers
- Use ducting for cables/tie cables together tidily
- Use recommended support devices for heavy equipment/don't place heavy equipment near to the edge of tops of tables
- Don't put too many plugs in a socket/use a RCB
- Ensure presence of CO₂ fire extinguishers

[2]

16 Four from:

- Adequate space for response/individual character boxes
- Fonts/font size should be easy to read
- Instructions how to complete form/clearly labelled field names
- Logical order of questions
- Questions spaced out/group relevant fields together
- Not too much text
- Sensible colour scheme
- Use of tick boxes
- Strike throughs
- Appropriate white space
- Provide box/place to sign in

[4]

17 (a) Three from:

- Data/file structures
- Validation routines
- Input methods/data entry screens
- Output formats/reports
- Error messages
- Processing/calculations

[3]

(b) (i) Normal data (1)

8 is within the acceptable range 0–10 (1)

[2]

(ii) Extreme data(1)

10 is on the edge of the 0–10 range (1)

[2]

(iii) Abnormal data (1)

13 is outside the acceptable range 0–10 (1)

[2]

18 (a) Two from:

- Purpose of the system
- Limitations of the system
- Hardware and software requirements
- Contact details of manufacturer/support network

[2]

(b) Two from:

- How to use the system
- Trouble-shooting guide
- Frequently asked questions

[2]

| | | | |
|---------------|---------------------------------------|-----------------|--------------|
| Page 7 | Mark Scheme: Teachers' version | Syllabus | Paper |
| | IGCSE – October/November 2010 | 0417 | 12 |

- 19 (a) Two** from:
 Lawful protection...
 ... given to authors and publishers
 Relates to the software the author/publisher created/published
 Prevents purchaser from making unlimited copies/lend it to others/change the software/sell it without the company's permission [2]
- (b) Two** from:
 Alteration of the code which is included to block copying
 Digital signature on the CD/DVD itself which prevents writers from copying exactly
 Encryption of the execution code requires a key to run
 Use of a dongle
 Registration system requiring the typing in of a registration code
 "Guards" are hardware or software modules that monitor the running program and ensure that it has not been tampered with in any way.
 Activation code which can be used only on a limited number of machines [2]
- 20 Six** from:
Laser printer
 High quality output
 Fast output
 Relatively quiet
 To print out invoices/letters etc.
 Relatively cheap to buy
Graph plotter
 High quality output
 Capable of very large printouts
 Print out car designs
Dot matrix printer
 Cheaper running costs
 Can work in industrial environment ...
 ...without losing performance
 To make instantaneous copies
 Can print continuously
 Requires multipart stationery
 Can print payslips
- Points which are repeated will only gain credit on the first mention [6]
- 21 Four** from:
 You get immediate feedback/You can ask questions immediately based on feedback
 You can be sure the person has received the message
 You know you have the right address/number
 Less impersonal/less risk of upsetting recipient/can detect emotions
 Can make yourself understood more easily
 You can see the other person's reaction [4]