Audience – 2023 ICT IGCSE 0417

1. March/2023/Paper_0417/12/No.12(a)

A tennis coach is creating a presentation to explain to teenagers the basics of playing tennis.

(a) Describe the design features that must be included to make the presentation appeal to the teenagers.

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..... [4]

2. June/2023/Paper_0417/12/No.14(b)

ePublishing software is used to create an ePublication to display a school's yearly magazine.

(b) The ePublishing software is subject to software copyright legislation.

Give **two** methods that could be used to prevent software copyright legislation being broken.

1 .....

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2 .....

.....

[2]

3. June/2023/Paper_0417/13/No.3(d)

A group of students are producing a class newsletter which they will email to parents of students in the class. They are deciding whether to use a laptop computer or a smartphone to type the newsletter.

(d) Describe the features that the students must include to make the newsletter appeal to the parents.

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..... [4]

4. Nov/2023/Paper_0417/12/No.4

A headteacher is considering setting up a card system for students to buy food in the school canteen.

The headteacher is trying to decide whether to install a system that uses magnetic stripe card readers or one that uses chip and PIN card readers.

Compare the use of magnetic stripe card readers with the use of chip and PIN card readers. Your answer must include similarities and differences.

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..... [6]

5. Nov/2023/Paper_0417/13/No.9(a)

The secretary of Tawara University has created web pages for former students. The former students are adults.

(a) State the design features of the web pages that would meet the needs of this target audience.

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..... [6]

6. March/2024/Paper_0417/12/No.15

The audience needs to be considered when creating an ICT solution.

(a) Describe what factors need to be considered for the age of the audience.

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..... [2]

(b) Describe what factors need to be considered for the interests of the audience.

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..... [2]

Communication – 2023 ICT IGCSE 0417

1. March/2023/Paper_0417/12/No.4(a)

Young people use the internet for research and communication.

(a) Search engines can be used to research information on the internet.

Describe **three** benefits of using a search engine to find information.

1 .....

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2 .....

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3 .....

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[3]

2. March/2023/Paper_0417/12/No.12(b)

A tennis coach is creating a presentation to explain to teenagers the basics of playing tennis.

(b) The designer needs to be aware of copyright legislation when creating the presentation.

Explain the need for copyright legislation.

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..... [2]

3. June/2023/Paper_0417/11/No.4(a, b)

(a) Describe the purpose of a web browser.

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..... [2]

(b) A company may use an intranet or an extranet.

Describe the differences between an intranet and an extranet.

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..... [2]

4. June/2023/Paper_0417/12/No.4

A company uses an extranet.

(a) Explain what is meant by an extranet.

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..... [2]

(b) Describe the differences between the internet and an extranet.

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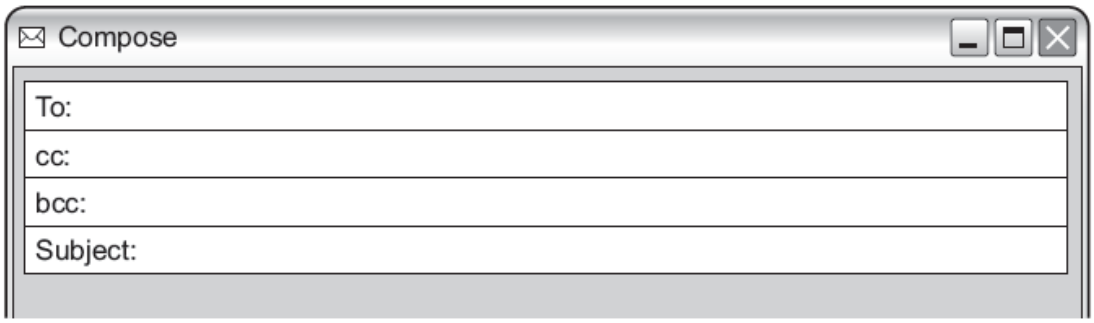
..... [2]

5. June/2023/Paper_0417/13/No.10

A school secretary is composing an email. She will send the email to a teacher and will copy the headteacher into the message. She can either copy the headteacher in as cc or bcc.



(a) Describe what is meant by cc and bcc.

cc .....

.....

.....

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bcc .....

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[4]

(b) A teacher is considering setting up either a forum or a blog for his class to help his students with their studies.

Describe the benefits of using a forum rather than a blog.

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..... [5]

Databases – 2023 ICT IGCSE 0417

1. March/2023/Paper_0417/12/No.7

Describe the characteristics of a primary key and a foreign key.

(a) Primary key

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..... [2]

(b) Foreign key

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..... [2]

2. Nov/2023/Paper_0417/11/No.1

A newsagent has created a database with fields to store details of each newspaper and magazine he sells. Part of the database is shown.

Product_number	Name_of_publication	Selling_price	Frequency	Publisher
1001	Wireless Times	$1.50	Daily	Trinity Press
1015	The Daily Press	$1.50	Daily	H W Brown
1034	OME	$2.00	Monthly	Trinity Press

(a) Tick (✓) the field name that would be the most appropriate primary key for the database.

A Product_number ☐

B Name_of_publication ☐

C Selling_price ☐

D Frequency ☐

E Publisher ☐

[1]

(b) The newsagent has added a field called Bar_code to store the bar code number of the product.

Explain why a presence check is not a suitable validation check for the Bar_code field.

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..... [1]

(c) The newsagent could use a relational database rather than a flat file database.

Describe the advantages of using a relational database rather than a flat file database.

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..... [4]

(d) From the data shown in the part of the database, identify the most appropriate data type for the:

(i) Selling_price

..... [1]

(ii) Name_of_publication

..... [1]

Document production – 2023 ICT IGCSE 0417

1. June/2023/Paper_0417/13/No.11

Many books contain a gutter margin.

Explain what is meant by a gutter margin.

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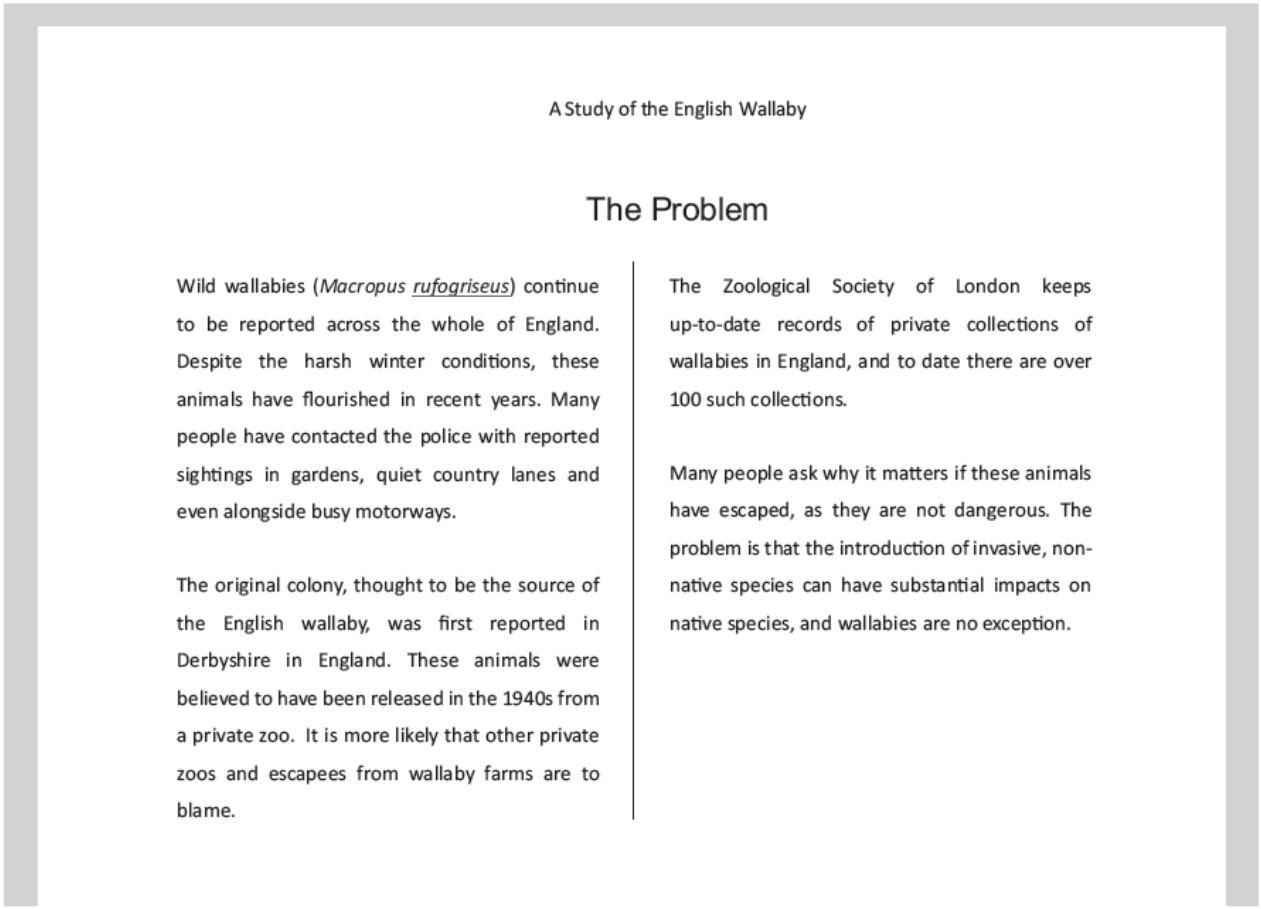
..... [3]

2. Nov/2023/Paper_0417/11/No.12(a, b)

A student has produced some work for a school project. A page of the work is shown.



A Study of the English Wallaby

The Problem

Wild wallabies (*Macropus rufogriseus*) continue to be reported across the whole of England. Despite the harsh winter conditions, these animals have flourished in recent years. Many people have contacted the police with reported sightings in gardens, quiet country lanes and even alongside busy motorways.

The original colony, thought to be the source of the English wallaby, was first reported in Derbyshire in England. These animals were believed to have been released in the 1940s from a private zoo. It is more likely that other private zoos and escapees from wallaby farms are to blame.

The Zoological Society of London keeps up-to-date records of private collections of wallabies in England, and to date there are over 100 such collections.

Many people ask why it matters if these animals have escaped, as they are not dangerous. The problem is that the introduction of invasive, non-native species can have substantial impacts on native species, and wallabies are no exception.

Fig. 12.1

(a) The student has placed a column break in his document.

Explain the purpose of setting a column break.

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..... [2]

(b) After running a spell check and proofreading his document the student notices that one word is still showing an error.

Explain why this word has caused an error and how the student could ensure that the error does not reappear when this word is used in future.

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..... [2]

3. Nov/2023/Paper_0417/12/No.12

The manager of a sports club is designing an online form for members to enter their personal details. The form must be accessible to all members of the club.

(a) State **four** characteristics of a good form design.

1 .....

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2 .....

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3 .....

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4 .....

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[4]

(b) State **two** characteristics of good form design that would help users with visual impairment to enter their data.

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..... [2]

4. Nov/2023/Paper_0417/13/No.2(a)

A student has created a document with images for her geography project.

(a) The layout of page one is portrait orientation. The student needs to set page two as landscape orientation. Before she can set the landscape orientation she needs to insert a break.

State the type of break that is needed.

..... [1]

File management – 2023 ICT IGCSE 0417

1. June/2023/Paper_0417/11/No.13

gif and jpg file formats are used to store images.

(a) Give **one** reason for using each of the file formats. Each of your reasons must be different.

gif .....

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jpg .....

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[2]

(b) Explain the differences between the two file formats.

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[6]

(c) The file size of an image can be reduced by changing the file format of the image.

State **two** other ways of reducing the file size of an image.

1 .....

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2 .....

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[2]

2. June/2023/Paper_0417/13/No.3(c)

A group of students are producing a class newsletter which they will email to parents of students in the class. They are deciding whether to use a laptop computer or a smartphone to type the newsletter.

(c) The newsletter is to be saved as a PDF and sent as an email attachment to parents.

Describe **two** benefits of saving the newsletter as a PDF.

1 .....

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2 .....

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[2]

3. Nov/2023/Paper_0417/13/No.2(b)

A student has created a document with images for her geography project.

(b) The student has placed images in the document.

State **two** file formats she could have used for the images.

1 .....

2 .....

[2]

ICT applications – 2023 ICT IGCSE 0417

1. March/2023/Paper_0417/12/No.5

The number of people using online shopping has increased. This has led to an increase in the number of journeys for the delivery drivers.

Describe how an expert system can be used to produce the best route for the delivery of items.

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..... [6]

2. March/2023/Paper_0417/12/No.13

People can watch a movie either by streaming or from a Blu-ray disc.

Give **two** advantages of watching the movie by streaming rather than from a Blu-ray disc.

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..... [2]

3. March/2023/Paper_0417/12/No.16(b)

A school car park is controlled by a barrier. When teachers enter the car park their number plate is read and the barrier is raised automatically.

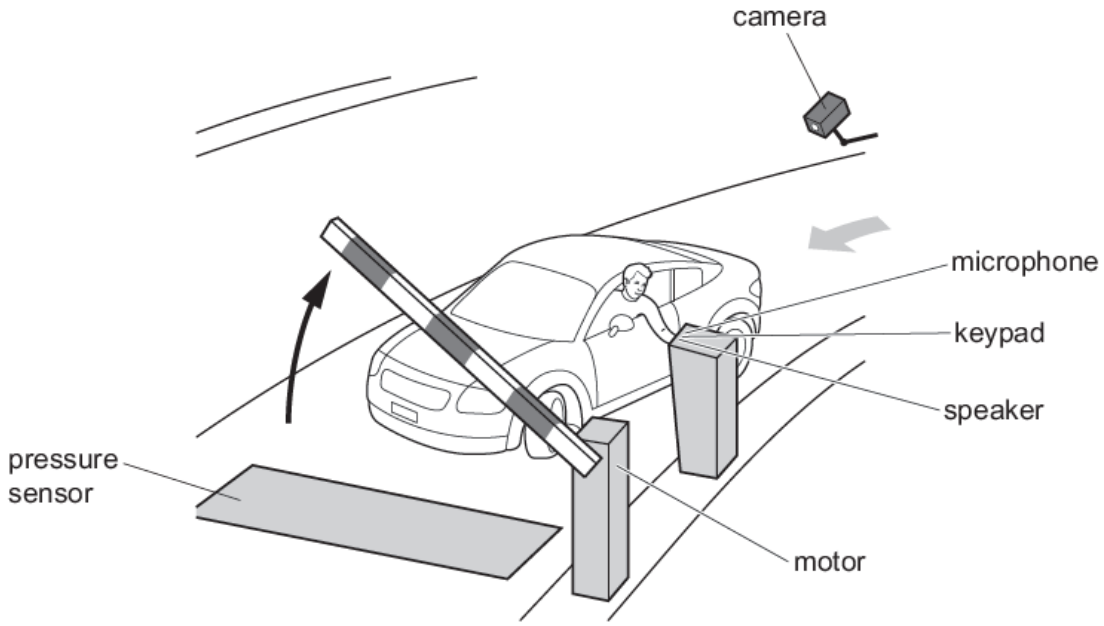

Fig. 16.1

(b) Automated Number Plate Recognition (ANPR) is used to read and check the number plate of the vehicle.

Discuss the benefits and drawbacks of using an ANPR system.

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..... [6]

4. June/2023/Paper_0417/11/No.12

Many media companies now provide media streaming for users to watch their television programmes.

(a) Explain what is meant by the term media streaming.

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..... [2]

(b) Describe the benefits and drawbacks of media streaming.

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..... [4]

5. June/2023/Paper_0417/12/No.13(a)

Weather forecasters use computer modelling.

(a) Explain why computer modelling is used to forecast the weather.

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..... [4]

6. June/2023/Paper_0417/12/No.14(a)

ePublishing software is used to create an ePublication to display a school's yearly magazine.

(a) Describe the characteristics of an ePublication.

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..... [4]

7. June/2023/Paper_0417/13/No.7

The retail industry uses point of sale (POS) systems.

(a) Discuss the benefits of using POS in the retail industry.

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..... [4]

8. Nov/2023/Paper_0417/11/No.6

A cricket club secretary saves a list of players as a PDF file.

(a) Describe **two** disadvantages of saving the list of players as a PDF file.

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..... [2]

The cricket club has a junior team for 6–8-year-old players. The secretary has produced an ePublication to attract new members to the junior team.

(b) State **two** features of an ePublication that could **not** appear on a paper poster.

1 .....

2 .....

[2]

(c) Describe the features that could be used to make the ePublication attractive to a younger audience.

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..... [6]

9. Nov/2023/Paper_0417/11/No.11

Many Automatic Teller Machines (ATM) allow customers to print out mini statements of their bank accounts.

Describe the inputs and processing involved in printing out a mini statement.

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10. Nov/2023/Paper_0417/12/No.7

A video of a race can be recorded using a camera either on an autonomous flying vehicle (drone) or in a helicopter. A person would be needed in the helicopter to operate the camera.

Describe **two** advantages and **two** disadvantages of using an autonomous flying vehicle (drone) to record the video of the race.

Advantage 1 .....

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Advantage 2 .....

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Disadvantage 1 .....

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Disadvantage 2 .....

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[4]

11. Nov/2023/Paper_0417/12/No.11

A clothing retailer only sells its clothes on the internet.

(a) Discuss the benefits and drawbacks to the clothing retailer of using internet shopping.

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..... [6]

12. Nov/2023/Paper_0417/13/No.13

A computer model can be used to design and test a bridge before it is built.

Discuss the benefits and drawbacks of using a computer model before building a bridge.

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..... [6]

13. Nov/2023/Paper_0417/13/No.8(c, d)

Many devices in the home can be connected to the internet so they can be controlled remotely. These devices are called smart devices. A house contains a smart security system.

(c) Part of the smart security system involves an automatic gate for vehicles approaching the house. There is a CCTV camera at the gate and the smart security system has software for recognising each vehicle's number plate.

Explain how automatic number plate recognition (ANPR) systems work.

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..... [4]

(d) Describe **three** problems that could occur when the ANPR system reads a vehicle number plate.

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..... [3]

14. March/2024/Paper_0417/12/No.7

An expert system is used to help to locate an underground water source.

(a) Describe the following components of an expert system.

(i) User interface

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..... [2]

(ii) Knowledge base

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..... [2]

(b) Explain how an expert system is used to discover locations to drill for water.

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..... [4]

15. March/2024/Paper_0417/12/No.13

Smart devices and microprocessors can monitor and control devices in the home.

Describe, giving examples, the negative effects of using these smart devices.

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..... [4]

Input and output devices – 2023 ICT IGCSE 0417

1. March/2023/Paper_0417/12/No.2

Tick (✓) the device which produces hard copy.

A Buzzer ☐

B Laser printer ☐

C Touch screen ☐

D Webcam ☐

[1]

2. March/2023/Paper_0417/12/No.6

Bluetooth is a method of wireless communication.

State **two** devices found in the home which could be connected via Bluetooth.

1 .....

2 .....

[2]

3. March/2023/Paper_0417/12/No.10

Some computers have touch screens.

Describe **three** benefits of using a touch screen.

1 .....

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2 .....

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3 .....

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[3]

4. March/2023/Paper_0417/12/No.16(a)

A school car park is controlled by a barrier. When teachers enter the car park their number plate is read and the barrier is raised automatically.

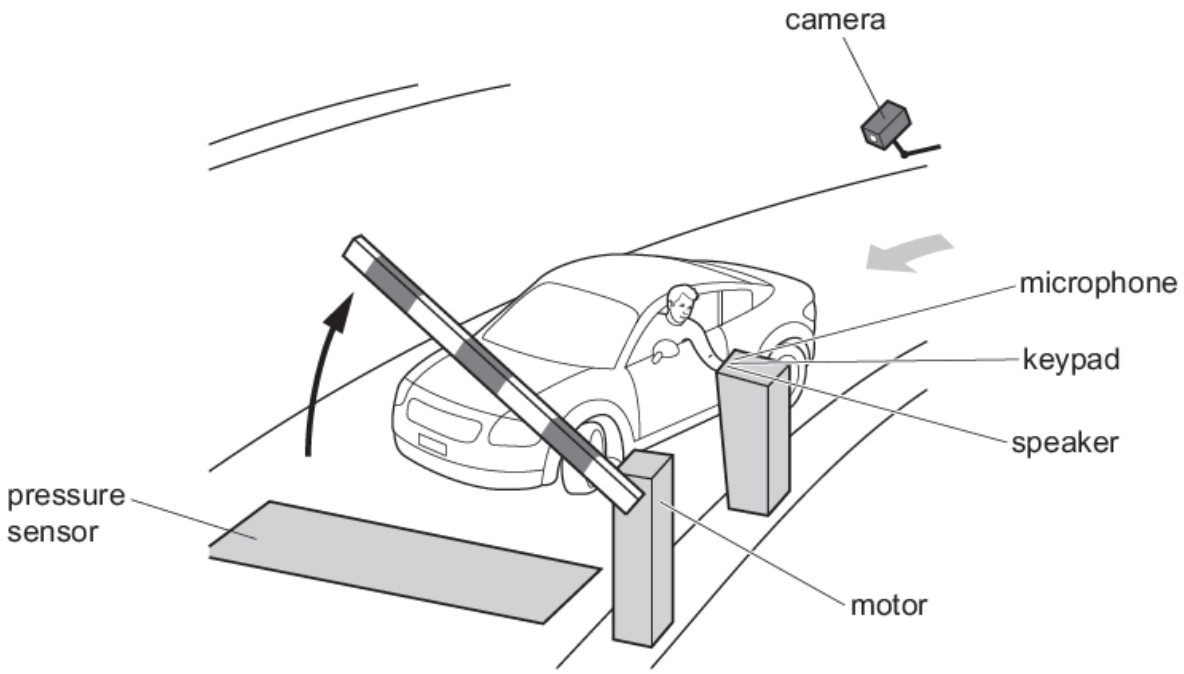

Fig. 16.1

(a) Visitors can use the keypad as an input device to enter a code which allows the barrier to be raised.

Identify **three** other input devices shown in Fig. 16.1.

1 .....

2 .....

3 .....

[3]

5. June/2023/Paper_0417/11/No.8

(a) Compare Optical Mark Readers (OMRs) with Optical Character Readers (OCRs). Your answer must include similarities and differences.

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..... [6]

(b) Identify **two** uses of Optical Mark Recognition (OMR).

1 .....

2 .....

[2]

6. June/2023/Paper_0417/11/No.11

Portable hard drives can be Solid State Drives (SSDs) or Hard Disk Drives (HDDs).

Explain why the SSD may be better to use than the HDD.

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..... [4]

7. June/2023/Paper_0417/12/No.2

Identify the most appropriate hardware from the descriptions given:

(a) non-volatile internal memory used to store the start-up instructions

..... [1]

(b) an internal component that provides the input and output of audio signals

..... [1]

(c) an internal component that is composed of the main memory, the control unit and the arithmetic logic unit.

..... [1]

8. June/2023/Paper_0417/12/No.3

A headteacher is producing a web page about the history of her school. She has been given some old hard-copy photographs which she will include on the web page. She has a digital camera and a scanner to use to convert the hard-copy photographs into a digital format.

Compare the use of a digital camera with a scanner in this scenario. Your answer must include similarities and differences.

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..... [4]

9. June/2023/Paper_0417/12/No.9

(a) The products in a warehouse contain either a bar code or a Radio Frequency Identification (RFID) tag.

The data about each product is read electronically.

Compare bar code readers and RFID readers. Your answer must include similarities and differences.

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..... [6]

(b) Identify **two** other uses of RFID.

1 .....

2 .....

[2]

10. June/2023/Paper_0417/12/No.13(b, c)

Weather forecasters use computer modelling.

(b) Data is collected by different types of sensor and then input to the computer model to be processed.

Identify **two** sensors that could be used to collect weather data.

1 .....

2 .....

[2]

(c) The processed data is then output.

Identify **two** output devices that could be used.

1 .....

2 .....

[2]

11. June/2023/Paper_0417/13/No.2(b, c)

Identify the most appropriate hardware from the descriptions given.

(b) An external device that retains a computer's data even after the computer is turned off.

..... [1]

(c) An input device that is attached to a monitor.

..... [1]

12. June/2023/Paper_0417/13/No.3

A group of students are producing a class newsletter which they will email to parents of students in the class. They are deciding whether to use a laptop computer or a smartphone to type the newsletter.

(a) Discuss the advantages and disadvantages of using a laptop computer rather than a smartphone for this purpose.

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..... [6]

(b) The students have decided to use a smartphone. Data for the newsletter will be input, stored and output by the smartphone.

(i) Identify **two** devices that are part of the smartphone that could be used to input the data for the newsletter.

1 .....

2 .....

[2]

(ii) Identify **two** devices that are part of the smartphone that could be used to output data from the newsletter.

1 .....

2 .....

[2]

(iii) Identify **two** appropriate devices that could be used to store data for the newsletter.

1 .....

2 .....

[2]

(c) The newsletter is to be saved as a PDF and sent as an email attachment to parents.

Describe **two** benefits of saving the newsletter as a PDF.

1 .....

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2 .....

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[2]

(d) Describe the features that the students must include to make the newsletter appeal to the parents.

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..... [4]

13. Nov/2023/Paper_0417/11/No.2

State the most appropriate word or phrase to complete each sentence.

(a) The type of data output from a sensor is

..... [1]

(b) The type of data read by a microprocessor is

..... [1]

(c) The item of hardware that converts data from a sensor so a microprocessor can read it is

..... [1]

(d) The type of sensor that is used in a refrigerator is

..... [1]

14. Nov/2023/Paper_0417/11/No.3

A group of students are carrying out a study of the quality of river water for a project. They can either use a tablet computer or a smartphone to monitor and record their findings.

(a) Discuss the advantages and disadvantages of using a tablet computer rather than a smartphone for this project.

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..... [6]

(b) Identify **two** devices that could be used by the students to enter data.

1 .....

2 .....

[2]

15. Nov/2023/Paper_0417/11/No.4

A headteacher is considering setting up a card system for students to buy food in the school canteen.

The headteacher is trying to decide whether to install a system that uses magnetic stripe card readers or one that uses chip and PIN card readers.

Compare the use of magnetic stripe card readers with the use of chip and PIN card readers. Your answer must include similarities and differences.

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..... [6]

16. Nov/2023/Paper_0417/12/No.1

Tick (✓) **one** external device.

A sound card ☐

B pen drive ☐

C motherboard ☐

D ROM ☐

[1]

17. Nov/2023/Paper_0417/13/No.3(b)

A teacher is setting up a school shop. The teacher is setting up a spreadsheet to keep the accounts of the shop.

(b) Each box delivered to the school shop includes a QR code.

Explain why QR codes are used.

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..... [4]

18. Nov/2023/Paper_0417/13/No.7(b)

Rockit Aircraft manufactures and flies aeroplanes.

(b) Some of the components used in the manufacture of aircraft are produced using a 3D printer.

Analyse the use of a 3D printer to make the components rather than making the components by hand.

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..... [6]

19. Nov/2023/Paper_0417/13/No.8(a, b)

Many devices in the home can be connected to the internet so they can be controlled remotely. These devices are called smart devices. A house contains a smart security system.

(a) Describe the benefits and drawbacks of using a smart security system.

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..... [4]

(b) Identify **two** sensors that could be used with the smart security system.

1 .....

2 .....

[2]

20. March/2024/Paper_0417/12/No.11

More people use desktop computers rather than tablet computers when working at home.

(a) Discuss the advantages and disadvantages of using desktop computers rather than tablet computers for doing work at home.

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..... [6]

(b) Desktop computers use input and output devices.

(i) State **two** input devices that can be used in a desktop computer for working at home.

1 .....

2 .....

[2]

(ii) State **two** output devices that can be used in a desktop computer for working at home.

1 .....

2 .....

[2]

Networks and the effects of using them – 2023 ICT IGCSE 0417

1. June/2023/Paper_0417/11/No.3

A headteacher is setting up a newsletter to send to parents of pupils at a school. She has some photographs saved on storage devices that she needs to place in the newsletter.

State **two** communication methods which the headteacher could use to upload the photographs onto the school network.

1 .....

2 .....

[2]

2. June/2023/Paper_0417/11/No.6

A student has set up a password for his laptop computer. The password he has chosen is Px2zY!Cg3?bd

(a) Discuss the benefits and drawbacks of using this password.

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..... [6]

(b) The student could have protected his laptop computer by using two-factor authentication. This could have combined his password with a biometric method.

State **two** examples of biometric methods he could use.

1 .....

2 .....

[2]

3. June/2023/Paper_0417/12/No.8

A teacher provides revision lessons during the holidays. The teacher plans to use web-conferencing for the lessons.

(a) Explain what is meant by web-conferencing.

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..... [3]

(b) Evaluate the use of web-conferencing in this scenario.

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4. June/2023/Paper_0417/13/No.2(a)

Identify the most appropriate hardware from the descriptions given.

(a) An internal hardware component that connects a computer to a Local Area Network.

..... [1]

5. June/2023/Paper_0417/13/No.4

A company uses an intranet. They are considering using an extranet.

Compare an intranet with an extranet. Your answer must include similarities and differences.

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..... [6]

6. June/2023/Paper_0417/13/No.9

The manager of an organisation is planning a meeting of its directors. The manager plans to use audio-conferencing for the meeting.

(a) Explain what is meant by audio-conferencing.

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..... [3]

(b) The organisation could use video-conferencing for the meeting.

Describe **three** advantages of using audio-conferencing rather than video-conferencing in this scenario.

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..... [3]

(c) Identify the hardware and software required to join the audio-conference.

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..... [4]

7. Nov/2023/Paper_0417/11/No.5

A bridge and a router are examples of networking devices.

(a) Explain the differences between a bridge and a router.

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..... [2]

(b) IP addresses are used in computer networks.

Explain what is meant by an IP address.

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..... [4]

(c) Explain the purpose of a routing table.

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..... [2]

8. Nov/2023/Paper_0417/12/No.3

Identify **three** different network communication devices and describe what each one does.

Device 1 .....

Description .....

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Device 2 .....

Description .....

.....

Device 3 .....

Description .....

.....

[6]

9. Nov/2023/Paper_0417/12/No.8(a)

State the most appropriate storage medium from its description.

(a) A storage medium that stores data on the internet.

..... [1]

10. Nov/2023/Paper_0417/12/No.10(d)

The manager of the Tawara Hotel has decided to computerise the hotel's room booking system. The new booking system will allow customers to book rooms online using an app on their smartphones.

The manager has employed a systems analyst who will carry out research into the current system by examining existing documentation and completed questionnaires from staff.

(d) The hotel uses both a WAN and a WLAN.

Describe the differences between a WAN and a WLAN.

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..... [4]

11. Nov/2023/Paper_0417/13/No.5

A student needs to purchase a new computer for use on his university course.

The laptop computers available to him are one that contains a solid-state drive (SSD) or one that only stores data on the internet, using the cloud.

Evaluate these two types of laptop computer.

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..... [6]

12. March/2024/Paper_0417/12/No.12

Describe how data is stored and managed when using cloud computing.

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..... [4]

Safety and security – 2023 ICT IGCSE 0417

1. March/2023/Paper_0417/12/No.4(b)

(b) Social media can be used to communicate with friends.

Give **four** precautions that young people should take when using social media.

1 .....

.....

2 .....

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3 .....

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4 .....

.....

[4]

2. March/2023/Paper_0417/12/No.11(a, b, c)

A student has downloaded a file which contains a virus.

(a) Describe the possible effects on his computer system if he opens the file.

.....

.....

.....

..... [2]

(b) Explain how the student could prevent the computer from being infected by viruses.

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..... [3]

(c) Some files containing viruses have to be quarantined as they cannot be deleted.

(i) State the type of files that may have to be quarantined rather than deleted.

..... [1]

(ii) Explain how the software detects and quarantines the file.

.....

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..... [3]

3. June/2023/Paper_0417/11/No.5

State the safety issue that is most likely to occur for each of these causes.

(a) Spilling drinks on computer equipment

..... [1]

(b) Overloading sockets by plugging in too many devices

..... [1]

(c) Trailing cables across the floor

..... [1]

(d) Placing a laser printer at the edge of a table

.....

..... [1]

4. June/2023/Paper_0417/12/No.5

State which health issue is most likely to occur from each description shown. Your answer must be different in each case.

(a) typing on a keyboard for long periods of time

..... [1]

(b) looking at a computer screen for a long time

..... [1]

(c) sitting with poor posture

..... [1]

5. June/2023/Paper_0417/12/No.6(a, b, c)

A company requires its employees to regularly change their login passwords for the company's computer systems. Passwords must be strong and cannot be reused.

(a) Explain **three** problems that may occur when the employees change their passwords regularly.

1 .....

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2 .....

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3 .....

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[6]

(b) The company has a website which uses a digital certificate.

Explain the purpose of the digital certificate.

.....

..... [1]

(c) A digital certificate is attached to an email.

State **three** items contained in a digital certificate.

1 .....

2 .....

3 .....

[3]

6. June/2023/Paper_0417/13/No.6

Two-factor authentication can use a number of different forms of identification.

(a) One form of identification is to use 'where the user is'.
An example of this would be the user's GPS location.

State **two** other forms of identification. Give an appropriate example of each.

1 .....

.....

Example .....

.....

2 .....

.....

Example .....

.....

[4]

(b) Explain the purpose of two-factor authentication.

.....

.....

.....

..... [2]

7. Nov/2023/Paper_0417/11/No.7

An employee in a company has used QWERTY123 as his login password for some time.

(a) Give **three** reasons why this is **not** advisable.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

(b) Complete the sentences using the most appropriate data protection method from the list. Your answers must be different in each case.

Anti-spyware	Biometrics	A digital certificate	A dongle
Encryption	A firewall	Two-factor authentication	User ID

(i) A method which scrambles the data so that it cannot be understood is

..... [1]

(ii) A fingerprint is an example of

..... [1]

(iii) A method of guaranteeing a website is authentic is

..... [1]

(iv) A hardware device that filters the information coming through the Internet connection into a LAN is

..... [1]

(c) An employee in the company uses his company password for other accounts.

Explain why this is **not** a good idea.

.....

..... [1]

8. Nov/2023/Paper_0417/13/No.4

A company's computer system is protected by both a user ID and a password.

(a) Explain how a user ID and a password are used to increase the security of data.

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..... [6]

(b) The company plans to improve the security of its computer system by using biometric methods.

Describe what is meant by biometric methods. Give **two** examples of biometrics.

Description .....

.....

.....

.....

Example 1 .....

Example 2 .....

[4]

9. March/2024/Paper_0417/12/No.8

A student has been the victim of a vishing scam.

(a) Explain what is meant by the term vishing.

.....

.....

.....

..... [2]

(b) Describe **two** methods that help to prevent vishing.

1.....

.....

2.....

.....

[2]

10. March/2024/Paper_0417/12/No.16

(a) State **four** characteristics of spam emails.

1 .....

.....

2 .....

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3 .....

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4 .....

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[4]

(b) Give **two** ways of reducing spam emails.

1 .....

.....

2 .....

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[2]

Spreadsheets – 2023 ICT IGCSE 0417

1. June/2023/Paper_0417/13/No.8

A teacher is creating a spreadsheet as an electronic mark book. Part of the electronic mark book displays how well a student did on a piece of work. When a student completes a piece of work the teacher will enter the mark into the electronic mark book and a message will be displayed.

- If the student gains 60 or more marks then 'Merit' is displayed
- If the student gains 50 to 59 marks then 'Pass' is displayed
- If the student gains a mark below 50 marks then 'Not Pass' is displayed.

The formula the teacher has used is:

=IF(A1>=60,"Merit",IF(A1>50,"Pass","Not Pass"))

The formula will need to be tested. The teacher will do this by entering test data into cell A1.

(a) Explain the steps that need to be taken to test the formula. Include in your answer any test data used and the reasons why these were chosen.

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..... [5]

(b) When the teacher enters a mark of 50 he expects 'Pass' to be displayed.

State the changes he needs to make to the formula to ensure 'Pass' is displayed.

.....

..... [1]

(c) When the electronic mark book is complete it needs to be tested with live data.

Explain what is meant by live data.

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..... [2]

2. Nov/2023/Paper_0417/13/No.3(c)

A teacher is setting up a school shop. The teacher is setting up a spreadsheet to keep the accounts of the shop.

(c) The teacher has created a formula in the spreadsheet that calculates the cost of purchasing a number of different items.

She has created a formula that:

- subtracts the discount per item from the price of the item to find the cost of the item
- then multiplies the cost of the item by the quantity.

	A	B	C	D	E	F
1	Product	Price of item	Discount per item	Quantity	Total	
2	Choco Bar	$1.20	$0.20	15	–$1.80	

The formula she enters into cell E2 is:

=B2-C2*D2

When this formula is entered into cell E2 the result is **not** what she expected. The result should be $15.00

Explain why the result was **not** $15.00

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..... [2]

Storage devices and media – 2023 ICT IGCSE 0417

1. June/2023/Paper_0417/11/No.11

Portable hard drives can be Solid State Drives (SSDs) or Hard Disk Drives (HDDs).

Explain why the SSD may be better to use than the HDD.

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..... [4]

2. June/2023/Paper_0417/12/No.12

Movies can be stored on Blu-ray discs or an internal hard disk.

(a) Describe why Blu-ray discs are preferred to an internal hard disk for storing movies.

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..... [4]

(b) Hard disks and Blu-ray discs are examples of backing storage.

(i) State **two** characteristics of backing storage.

1 .....

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2 .....

.....

[2]

(ii) Identify **two** other types of backing storage.

1 .....

2 .....

[2]

3. Nov/2023/Paper_0417/12/No.8(b, c, d)

State the most appropriate storage medium from its description.

(b) Internal storage where the current instruction is stored.

..... [1]

(c) A solid-state storage that is used in digital cameras.

..... [1]

(d) An optical storage medium that stores high-definition (HD) movies.

..... [1]

4. March/2024/Paper_0417/12/No.1

Circle **two** items which are solid-state storage media.

Actuator	Blu-ray disc	Cloud	DVD
Flash memory	Hard disk	Printer	SD card

[2]

The effects of using IT – 2023 ICT IGCSE 0417

1. March/2023/Paper_0417/12/No.8

Many devices in the home can connect to the internet. These are called smart devices.

Describe **four** benefits of using these smart devices.

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..... [4]

2. June/2023/Paper_0417/12/No.4

A company uses an extranet.

(a) Explain what is meant by an extranet.

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.....

.....

..... [2]

(b) Describe the differences between the internet and an extranet.

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..... [2]

3. June/2023/Paper_0417/12/No.5

State which health issue is most likely to occur from each description shown. Your answer must be different in each case.

(a) typing on a keyboard for long periods of time

..... [1]

(b) looking at a computer screen for a long time

..... [1]

(c) sitting with poor posture

..... [1]

4. June/2023/Paper_0417/13/No.5

Identify **two** appropriate IT-related causes for each of the health issues. Your answers must be different in each case.

(a) repetitive strain injury (RSI)

1 .....

2 .....

[2]

(b) eye strain

1 .....

2 .....

[2]

5. Nov/2023/Paper_0417/11/No.8

Microprocessor-controlled devices are used in the home.

Describe, with examples, how using these devices can affect the health and fitness of their users.

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..... [6]

6. Nov/2023/Paper_0417/12/No.10(b)

The manager of the Tawara Hotel has decided to computerise the hotel's room booking system. The new booking system will allow customers to book rooms online using an app on their smartphones.

The manager has employed a systems analyst who will carry out research into the current system by examining existing documentation and completed questionnaires from staff.

(b) Following the analysis, the systems analyst will implement the new system using either parallel running or direct changeover.

Evaluate these different methods of implementation.

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..... [6]

The systems life cycle – 2023 ICT IGCSE 0417

1. March/2023/Paper_0417/12/No.3

State **three** items that should be included in the technical documentation of a computer system.

1 .....

2 .....

3 .....

[3]

2. March/2023/Paper_0417/12/No.17(a)

Verification and validation are used to check data.

(a) Identify and describe **two** methods of verification.

Method 1 .....

Description .....

.....

.....

Method 2 .....

Description .....

.....

.....

[4]

3. March/2023/Paper_0417/12/No.15

Tawara Stores is a small company that does not make much profit. The managing director is deciding whether to implement a new IT system using direct changeover or parallel running.

Describe the advantages and disadvantages of using direct changeover compared with parallel running in this scenario.

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..... [6]

4. June/2023/Paper_0417/11/No.1

A book has an ISBN which is 330247204X

Tick (✓) the most appropriate data type for the ISBN.

A Numeric: integer ☐

B Text ☐

C Boolean ☐

D Date ☐

[1]

5. June/2023/Paper_0417/11/No.7

A systems analyst has been asked to carry out an analysis of a company's current computer system.

(a) State **three** methods of analysing the current system.

1 .....

2 .....

3 .....

[3]

(b) The systems analyst is working with a team to create some new software. The software documentation will be stored on the cloud.

Describe how the team can use the cloud to share the documentation.

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..... [4]

(c) Members of the team can use video-conferencing to join business meetings from different locations around the world.

Describe, giving reasons, **three** disadvantages of using video-conferencing for business meetings rather than meeting in person.

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..... [6]

6. June/2023/Paper_0417/12/No.1

A book contains a bar code whose number is 503619309903

Tick (✓) the most appropriate validation check to test the validity of the bar code.

A check digit ☐

B format check ☐

C range check ☐

D spell check ☐

[1]

7. June/2023/Paper_0417/12/No.7

A student is creating a spreadsheet that includes a formula to check a number entered in a cell is between two values.

- The number is entered in cell A10 as an integer.
- If the number is between the two values then a message 'OK' is displayed, otherwise 'error' is displayed.

The formula the student has created is:

=IF(AND(A10>1,A10<32),"OK","error")

Data will be used to test the formula.

(a) Identify **two** items of extreme test data the student should use and give the reason why this data was chosen.

Extreme test data 1 .....

Extreme test data 2 .....

Reason .....

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[3]

(b) The student has entered an item of abnormal test data.

Explain why abnormal test data is used.

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..... [3]

8. June/2023/Paper_0417/13/No.1

A book has an ISBN which is 0 330 24720 4

Tick (✓) the most appropriate validation check to test the validity of the ISBN.

A character check ☐

B format check ☐

C length check ☐

D range check ☐

[1]

9. Nov/2023/Paper_0417/11/No.10

A teacher has set up a database for a class library. The data about the books in the class library will be entered by the teacher.

(a) The data can be verified by double data entry or visual verification.

Compare double data entry with visual verification. Your answer must include similarities and differences.

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..... [4]

(b) When data is entered into a date field it is validated. An example of the data that could be entered is 01/04/2023

State **two** validation checks that could be used on this data.

1 .....

2 .....

[2]

10. Nov/2023/Paper_0417/12/No.4

A teacher is creating a database for a class library. The teacher types the details of each book into the database. The teacher has entered a number of records.

Book_number	Name_of_book	Publisher	Date_acquired	ISBN
1101	Build a computer	JB Books	02/11/2020	9780119192065
1012	IT terms	MMA Books	16/05/2021	0893603944
1414	Databases are fun	Cam Press	01/10/2009	0090116393

Identify and describe a validation check based on the data shown in the database table, which could be applied to the data as it is entered into each of the fields. Each validation check must be different.

Book_number

Validation check.....

Description.....

.....

.....

Date_acquired

Validation check.....

Description .....

.....

.....

ISBN

Validation check.....

Description.....

.....

.....

[6]

11. Nov/2023/Paper_0417/12/No.9

A hospital administrator enters data from medical forms into a database. Validation and verification are both used when entering data to minimise errors.

Explain what is meant by validation and verification and why they are both needed in this scenario.

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..... [6]

12. Nov/2023/Paper_0417/12/No.10(a)

The manager of the Tawara Hotel has decided to computerise the hotel's room booking system. The new booking system will allow customers to book rooms online using an app on their smartphones.

The manager has employed a systems analyst who will carry out research into the current system by examining existing documentation and completed questionnaires from staff.

(a) One item of information that the systems analyst will need to identify is problems with the current system.

State **three** other items of information that the systems analyst will need to identify.

1 .....

2 .....

3 .....

[3]

13. Nov/2023/Paper_0417/13/No.1

Peter needs to create a validation check for product numbers. Three examples of product numbers he needs to check are:

977135120127916

976143148163921

845132120651166

Identify **two** validation checks he could use to check the numbers.

1 .....

2 .....

[2]

14. Nov/2023/Paper_0417/13/No.3(a)

A teacher is setting up a school shop. The teacher is setting up a spreadsheet to keep the accounts of the shop.

(a) Fig. 3.1 shows a box containing 50 Choco Bars to sell in the shop. The information on the box will be entered into the spreadsheet.

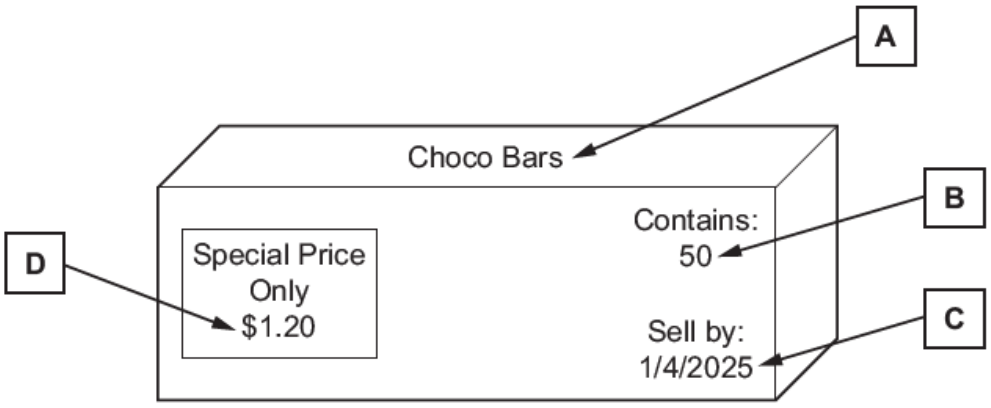

Fig. 3.1

State the most appropriate display format in the spreadsheet for each piece of data shown on the box. Your answer must be different in each case.

A .....

B .....

C .....

D .....

[4]

15. Nov/2023/Paper_0417/13/No.10

A school has employed a systems analyst to help update its computerised examination system.

(a) The systems analyst researches the current system to see what will be required in the new system.

State the methods of researching the current system that are described:

(i) talking to the network manager and examinations officer about the current system

..... [1]

(ii) watching the users operating the current system

..... [1]

(iii) forms sent out to all users to complete and return.

..... [1]

(b) After completing the analysis, the new system needs to be designed. One item that needs to be designed is a file structure.

Identify **three** other items that would need to be designed.

1 .....

2 .....

3 .....

[3]

16. March/2024/Paper_0417/12/No.9

Compare a test strategy with a test plan. Your answer should include similarities and differences.

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..... [6]

17. March/2024/Paper_0417/12/No.10

A form tutor at Tawara School is producing a database about the students in his class.

When the database is completed, it needs to be verified.

(a) Explain the importance of visual verification.

.....

.....

.....

..... [2]

(b) An example of the date of birth stored on the database is: 15/05/2009

Describe **three** validation checks that could be carried out on the date of birth.

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..... [6]

Types and components of computer systems – 2023 ICT IGCSE 0417

1. March/2023/Paper_0417/12/No.1

(a) Explain what is meant by the term software.

.....

..... [1]

(b) State the **two** types of software used by computers.

1 .....

2 .....

[2]

2. March/2023/Paper_0417/12/No.14

Compare RAM and ROM. Your answer must include similarities and differences.

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..... [4]

3. June/2023/Paper_0417/11/No.2

Identify the hardware from the descriptions given.

(a) A volatile internal memory that stores the current instruction.

..... [1]

(b) A printed circuit board containing the CPU and other components of a computer.

..... [1]

(c) A printed circuit board that controls the output to a monitor.

..... [1]

(d) A printed circuit board that is installed in a computer so that the computer can be connected to a network.

..... [1]

4. June/2023/Paper_0417/11/No.10

Some people use dialogue-based user interfaces to operate their car audio system.

(a) Describe what is meant by a dialogue-based user interface.

.....

.....

.....

..... [2]

(b) Describe the benefits and drawbacks of using a dialogue-based user interface in this way.

.....

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..... [4]

5. June/2023/Paper_0417/12/No.11

Movies can be stored on Blu-ray discs or an internal hard disk.

(a) Describe why Blu-ray discs are preferred to an internal hard disk for storing movies.

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.....

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..... [4]

(b) Hard disks and Blu-ray discs are examples of backing storage.

(i) State **two** characteristics of backing storage.

1 .....

.....

2 .....

.....

[2]

(ii) Identify **two** other types of backing storage.

1 .....

2 .....

[2]

6. Nov/2023/Paper_0417/11/No.9

Rowena's laptop computer contains a small capacity Solid State Drive (SSD) of 32Gb and a large capacity Hard Disk Drive (HDD) of 1024Gb.

(a) State, giving a reason for your choice, a use for the SSD and a use for the HDD in the laptop computer. Your answers must be different in each case.

(i) SSD

.....

.....

.....

..... [2]

(ii) HDD

.....

.....

.....

..... [2]

(b) The laptop computer also contains internal memory.

Give **two** examples of internal memory.

1 .....

2 .....

[2]

7. Nov/2023/Paper_0417/12/No.2

A computer system uses both analogue and digital data.

(a) Explain what is meant by these types of data.

(i) analogue data

.....

..... [1]

(ii) digital data

.....

..... [1]

(b) Digital data is processed in a computer system. Sometimes digital data needs to be converted to analogue data.

Explain why digital data may need to be converted to analogue data.

.....

..... [1]

(c) Use the most appropriate phrase from the list to complete the sentences. Your answer must be different in each case.

analogue data

digital data

display a graph on a monitor

input the maximum safe water level for a river

measure acidity levels in a river

control humidity levels

open the windows in a greenhouse

(i) A motor is used to

.....

..... [1]

(ii) A DAC outputs

.....

..... [1]

(iii) A sensor is used to

.....

..... [1]

8. Nov/2023/Paper_0417/12/No.5

A group of pupils is planning to create a newsletter for a history project. The group can either use a smartphone or a phablet computer.

(a) Explain what is meant by a phablet computer.

.....

.....

.....

..... [2]

(b) Discuss the advantages and disadvantages of using a phablet computer rather than a smartphone for this project.

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.....

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..... [6]

9. Nov/2023/Paper_0417/12/No.6

Many teachers use multimedia projectors in their lessons.

(a) State **two** health issues associated with the use of multimedia projectors.

1 .....

2 .....

[2]

(b) State **two** safety issues associated with the use of multimedia projectors.

1 .....

2 .....

[2]

10. Nov/2023/Paper_0417/13/No.7(a)

Rockit Aircraft manufactures and flies aeroplanes.

(a) The pilots at Rockit Aircraft are trained using extended reality.

Describe what is meant by extended reality.

.....

.....

.....

..... [2]

11. March/2024/Paper_0417/12/No.2

A computer system consists of both hardware and software.

(a) Explain what the following types of software provide in the computer system.

Applications .....

.....

System .....

.....

[2]

(b) Give **two** examples of each type of software.

(i) Applications

1 .....

2 .....

[2]

(ii) System

1 .....

2 .....

[2]

12. March/2024/Paper_0417/12/No.3

There are two forms of data: analogue and digital.

Contrast analogue and digital data.

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.....

..... [4]

13. March/2024/Paper_0417/12/No.4

Computers contain a Central Processing Unit (CPU).

Describe the role of the CPU in processing instructions to produce an output.

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..... [4]

14. March/2024/Paper_0417/12/No.5

A doctor uses a gesture-based user interface.

State **two** other types of user interface.

1 .....

2 .....

[2]

15. March/2024/Paper_0417/12/No.6

Augmented Reality can be used with a Global Positioning System (GPS) device.

(a) State **two** other uses of Augmented Reality.

1 .....

2 .....

[2]

(b) Describe the differences between Augmented Reality and Virtual Reality.

.....

.....

.....

..... [2]

Website authoring – 2023 ICT IGCSE 0417

1. March/2023/Paper_0417/12/No.9

A web page can contain three web development layers. One of these is the content layer.

(a) State **one** use of the content layer.

.....

..... [1]

(b) Identify the other **two** web development layers and give a use for each.

1 .....

Use .....

.....

2 .....

Use .....

.....

[4]

2. June/2023/Paper_0417/11/No.9

(a) Absolute and relative file paths are used in the content layer when creating a web page.

(i) Explain the differences between an absolute file path and a relative file path.

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.....

..... [2]

(ii) Explain why absolute file paths should **not** be used for hyperlinks to locally-saved web pages.

.....

..... [1]

(b) Anchors and hyperlinks are both used in HTML.

Compare an anchor with a hyperlink. Your answer must include similarities and differences.

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..... [4]

3. June/2023/Paper_0417/12/No.10

Metatags can be used in a web page.

(a) A metatag can be used to define the viewport settings.

Identify **three** other items that can be defined in metatags.

1 .....

2 .....

3 .....

[3]

(b) Metatags are used in the HTML of web pages.

State the section of the HTML which contains the metatags.

..... [1]

4. June/2023/Paper_0417/13/No.12

A web page has an attached stylesheet in the head section and also has an inline style attribute in the body section.

Explain why the inline style attribute is used.

.....

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.....

..... [2]

5. March/2024/Paper_0417/12/No.14

A stylesheet for a website can contain both styles and classes.

(a) Explain the differences between a style and a class.

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.....

.....

.....

..... [3]

(b) State the web development layer where the stylesheet is used.

..... [1]