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Please check the examination details below before entering your candidate infor on

Candidate surname | Other names

Centre Number | Candidate Number

Pearson Edexcel International GCSE (9–1)

Monday 15 May 2023

Afternoon (Time: 1 hour 30 minutes)

Paper reference **4IT1/01**

Information and Communication Technology (ICT)

PAPER 1: Written Paper

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*

Information

- The total mark for this paper is 100.
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

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Answer ALL questions.

Write your answers in the spaces provided.

Some questions must be answered with a cross in a box ☒. If you change your mind abo answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

Camille has two children.

Camille uses ICT to organise her family life and her children use ICT for school.



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1 Camille creates a home network.

(a) (i) State what is meant by 'tethering'.

(1)

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(ii) Which **one** of these is a reason for using a network?

(1)

- ☒ **A** To licence software as open source
- ☒ **B** To prevent latency
- ☒ **C** To provide flexible access
- ☒ **D** To reduce hardware costs

(b) Camille connects to a LAN.

(i) State **two** features of a LAN that are different from a WAN.

(2)

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2 .....

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(ii) Describe the role of a wireless access point.

(2)

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(iii) Which **one** of these is a hardware device that directs traffic between a LAN and a WAN?

(

- ☒ **A** Booster
- ☒ **B** Gateway
- ☒ **C** Hub
- ☒ **D** Server

(c) Give **two** benefits to Camille's employer of her working from home.

(2)

1 .....

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2 .....

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(d) Camille's mobile phone can receive data using 3G, 4G, 5G and GPS.

State **two other** wireless communication methods used by mobile phones.

(2)

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(e) Camille uses wired and wireless connectivity.

(i) Draw **one** straight line from **each** connection method to the correct characteristic.

(3)

Connection method	Characteristic
3G	Requires a SIM
GPS	Longest range
Wired	Only used in a LAN
	Least affected by interference

(ii) State what is meant by 'latency'.

(1)

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(f) Describe the function of a VPN.

(2)

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(g) Camille uses anti-malware to secure her data online.

Describe **two** types of malware.

(4)

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(h) Explain why Camille would use a filter in her network.

(2)

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(Total for Question 1 = 23 marks)

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2 Camille uses digital devices for work.

(a) A distance sensor is used as an input for an embedded system in a car.

(i) Describe how a distance sensor is used by an embedded system in a car.

(2)

(ii) Which **one** of these is another example of an input for a device?

(1)

- ☒ **A** LED
- ☒ **B** Monitor
- ☒ **C** Scanner
- ☒ **D** Speaker

(b) State the number of instructions that can be executed every second by a 3.2MHz processor.

(1)

(c) GPS can be used to monitor people's movements.

State **one other** way of monitoring people's movements.

(1)

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(d) Camille's laptop uses secondary storage.

(i) Which **one** of these is a feature of a hard disk that allows data to be read?

(1)

- ☒ **A** It allows electrons to be stored
- ☒ **B** It is reflective
- ☒ **C** It is magnetically charged
- ☒ **D** It connects directly to the network

(ii) Here is a diagram that shows secondary storage.

Four files (A, B, C and D) are stored on it. Each file is made up of several blocks (1, 2, 3, etc.)

			C1	A1	A2		D1		B1	C2	C3		B2	D2	

Complete the diagram to show the state of the storage after running a defragmentation utility.

(2)

(iii) State **one** type of storage media that stores data as electrical charges.

(1)

.....

(iv) Which **one** of these is the largest amount of data?

(1)

- ☒ **A** 0.010 GiB
- ☒ **B** 0.100 TiB
- ☒ **C** 0.001 MiB
- ☒ **D** 1.000 KiB

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(v) State **two** characteristics of hard disk drives that make them more suitable use with servers than magnetic tape.

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2 .....

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(vi) Which **one** of these is a reason for using local storage rather than online storage?

(1)

- ☒ **A** Data stored locally is harder to intercept
- ☒ **B** Local storage media cannot be encrypted
- ☒ **C** Online storage cannot be backed up automatically
- ☒ **D** Online storage is always compressed

(e) Which **one** of these is processed by the CPU?

(1)

- ☒ **A** Connectivity
- ☒ **B** Embedded systems
- ☒ **C** Hardware
- ☒ **D** Malware

(f) Camille's laptop uses memory.

(i) Which **one** of these statements is true?

(1)

- ☒ **A** ROM is never used in laptops
- ☒ **B** ROM always stores more instructions than RAM
- ☒ **C** ROM contains values that can be changed by applications
- ☒ **D** ROM is used to store startup files

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(ii) Give **one** drawback of increasing the size of random access memory.

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(g) Which **one** of these is a function of an operating system?

(1)

- ☒ **A** Convergence
- ☒ **B** Media access control
- ☒ **C** Memory management
- ☒ **D** Office productivity

(Total for Question 2 = 17 marks)

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3 Camille shares family photographs online with friends.

(a) Give **two** benefits to Camille's friends of Camille using an online community to share photographs.

(2)

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2 .....

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(b) Which **one** of these provides content to client computers?

(1)

- ☒ **A** ISP
- ☒ **B** LAN
- ☒ **C** Router
- ☒ **D** Server

(c) Describe how transactional data can be used with photographs stored online to improve the experience of users.

(2)

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(d) Explain **one** reason why Camille should use hosted software to edit her photographs rather than local software.

(2)

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(e) Which **one** of these is a reason to use an avatar?

- ☒ **A** Adds security
- ☒ **B** Enhances accessibility
- ☒ **C** Improves privacy
- ☒ **D** Prevents social interaction

(f) Camille connects to a wireless access point to upload her photographs.

(i) Explain **one** reason why moving closer to the wireless access point reduces transfer time.

(2)

(ii) Explain **one** effect that compressing the data would have on data transfer.

(2)

(g) Explain **one** reason why a website should provide accessibility features.

(2)

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(h) Camille buys extra online storage.

(i) State **two** protocols that could be used to secure online payments.

(2)

1 .....

2 .....

(ii) State how encryption prevents data from being understood.

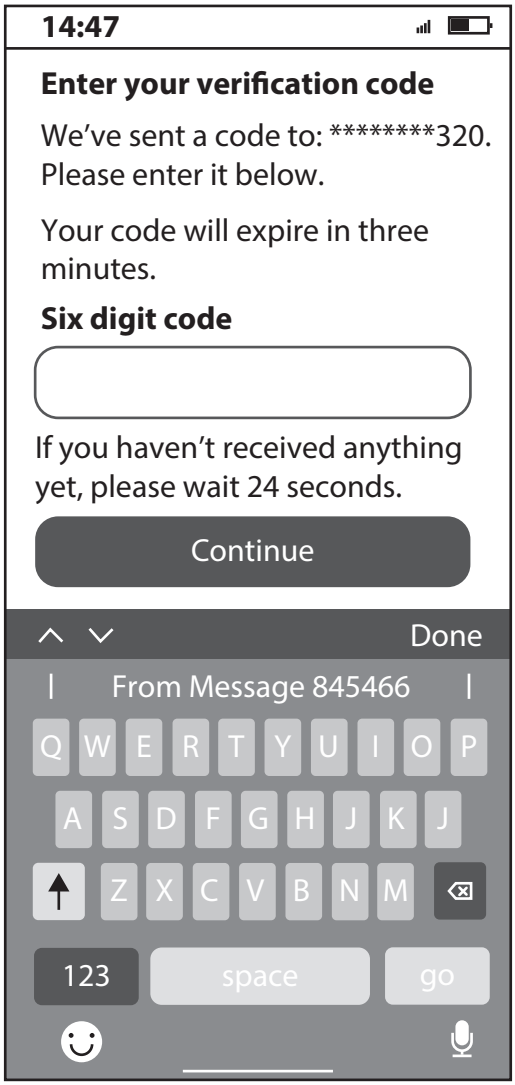
(1)

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(iii) After Camille enters her password correctly, she receives this text message from her bank.



Explain why this message helps keep Camille's payments secure.

(2)

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(Total for Question 3 = 19 marks)

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4 Camille's child, Sarah, uses websites and video sharing sites for her school work.

(a) State **one** way of reducing the environmental impact of the use of servers that host online services.

(1)

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(b) Sarah participates in an online meeting as part of a lesson.

(i) State **two** peripheral output devices Sarah requires to participate in the online meeting.

(2)

1 .....

2 .....

(ii) Sarah uses wired connectivity. Her video is not synchronised with video from other participants.

Which **one** of these would cause this issue?

(1)

☒ **A** Higher bandwidth

☒ **B** Higher latency

☒ **C** Less interference

☒ **D** Using wired connectivity

(c) Explain **one** drawback to learning of enabling the comments section of an online video content service.

(2)

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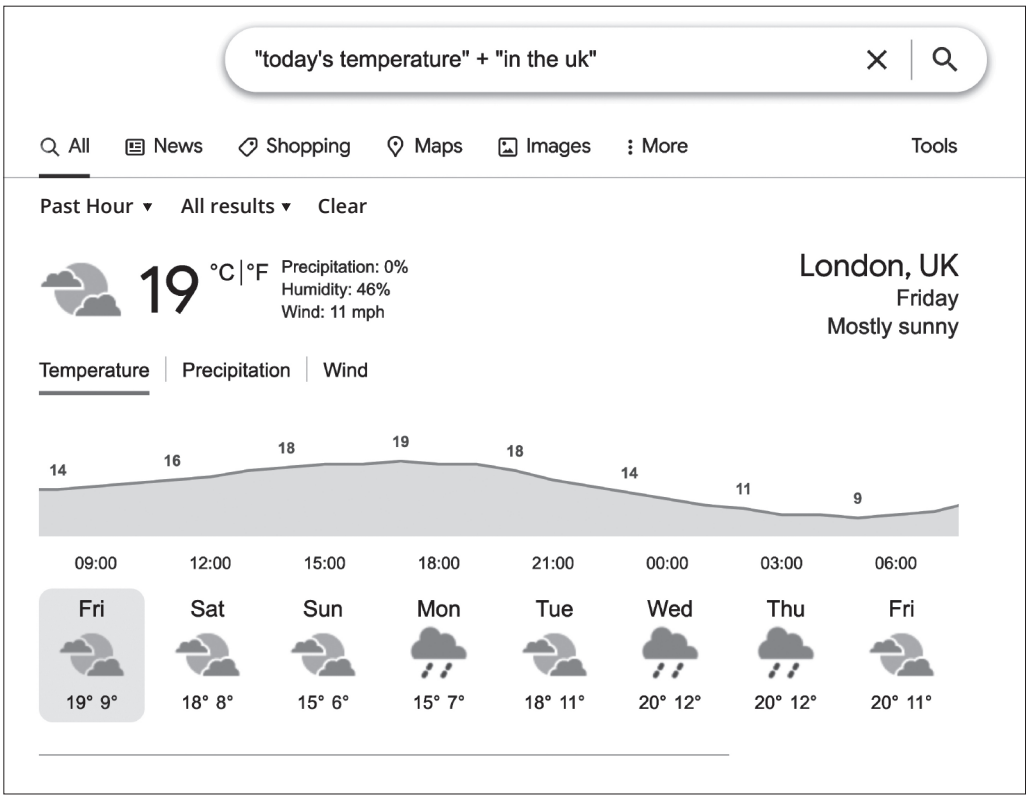
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(d) Sarah is researching changes in global temperatures.

Here is an image of her use of a search engine.



(i) Explain **one** way the search can be improved.

(2)

(ii) Describe how **one** peripheral device can support users of the search engine who have accessibility needs.

(2)

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(e) Sarah's sister plays games with friends online.

Describe **one** key feature of online gaming that develops social skills.

(2)

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(f) Discuss the reliability of information from online sources.

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(Total for Question 4 = 20 marks)

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5 Camille designs controllers for a games console.

(a) Controllers are input devices.

State **two other** peripheral input devices for a games console.

(2)

1 .....

2 .....

(b) Defragmentation is a type of utility software.

State **two other** types of utility software.

(2)

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2 .....

(c) State the device that forwards packets of data in a wide area network.

(1)

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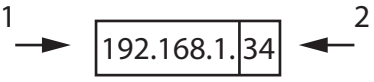
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(d) Here is an Internet Protocol (IP) address.

State what the labelled parts of this address are used for.

(2)



1 .....

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2 .....

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(e) Explain **one** way of staying safe online.

(2)

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(f) Camille works remotely as part of a team.

Explain **two** negative impacts the use of the Internet has on the team's working practices.

(4)

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2 .....

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(g) Camille is writing an article for a website.

Discuss how ICT makes it easier to plagiarise and the impact of plagiarism on others.

(8)

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(Total for Question 5 = 21 marks)

TOTAL FOR PAPER = 100 MARKS

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