

**Paper reference 4IT1/01**  
**Pearson Edexcel**  
**International GCSE (9–1)**

<b>Total Marks</b>
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**Information and Communication  
Technology (ICT)**  
**PAPER 1: Written Paper**

**Thursday 9 November 2023 – Morning**  
**Time: 1 hour 30 minutes**

**In the boxes below, write your name, centre number  
and candidate number.**

<b>Surname</b>					
<b>Other names</b>					
<b>Centre Number</b>					
<b>Candidate Number</b>					

**YOU MUST HAVE**

**Nil.**

**YOU WILL BE GIVEN**

**Data Book.**

**INSTRUCTIONS**

- **Answer ALL the questions.**
- **Answer the questions in the spaces provided in this question paper or Data Book – 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.**
- **There may be spare copies of some diagrams in case you need them.**

**(continued on the next page)**

**Turn over**

**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.**
-

**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 about an answer, put a line through the box ☒ and then mark your new answer with a cross ☐.**

**(continued on the next page)**

**Gail works at a concert venue.**

**The staff at the venue use ICT for work.**



**A black and white photograph shows an office environment. Two people are sitting at desks, in front of laptop computers. Both are wearing headsets, one is typing as she speaks. Also visible on the desks are paperwork and stationary.**

**In the background, two workers are chatting together and several more desks are visible.**

**(continued on the next page)**

**Turn over**

**1. The concert venue uses an online booking system.**

**(a) The system uses software and hardware.**

**(i) Which ONE of these is the best type of software to use to manage online bookings?**

**(1 mark)**

☐

**A Database**

☐

**B File management**

☐

**C Spreadsheet**

☐

**D Web authoring**

**(continued on the next page)**

**Turn over**

**Question 1 (a) continued**

- (ii) Which ONE of these is the best choice of computer for a concert venue to use for processing bookings?  
(1 mark)

☐

**A Desktop**

☐

**B Embedded**

☐

**C Mainframe**

☐

**D Tablet**

**(continued on the next page)**

**Question 1 continued**

- (b) Explain ONE benefit to CUSTOMERS of using an online booking system.  
(2 marks)**

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**Question 1 continued**

- (c) Describe the role of encryption software in an online booking system.  
(2 marks)**

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**(continued on the next page)**

**Question 1 continued**

**(d) Which ONE of these is a network hardware device that can prevent DDOS attacks on the booking system?**  
**(1 mark)**

☐

**A Firewall**

☐

**B Hub**

☐

**C Repeater**

☐

**D Router**

**(continued on the next page)**

**Question 1 continued**

**(e) Which ONE of these is a role of a server?**  
**(1 mark)**

☐

**A Handle requests from clients**

☐

**B Provide a wireless connection**

☐

**C Provide access to a WAN from a LAN**

☐

**D Store the client's operating system**

**(continued on the next page)**

**Question 1 continued**

- (f) Give TWO types of online payment system that customers could use to pay for tickets.  
(2 marks)**

**TYPE 1** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**TYPE 2** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**(continued on the next page)**

**Question 1 continued**

**(g) Customers can store a digital ticket to their smartphone and access the venue by scanning their phone.**

**(i) Which ONE of these is the wireless technology used during this scan?  
(1 mark)**

☐

**A 4G**

☐

**B Bluetooth**

☐

**C NFC**

☐

**D Wi-Fi**

**(continued on the next page)**

**Turn over**

**Question 1 (g) continued**

- (ii) Explain why the venue must also provide customers with the option to print tickets.  
(2 marks)**

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- (h) The venue uses an auction site to sell posters.  
Give ONE feature of an auction site.  
(1 mark)**

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**Turn over**

**Question 1 continued**

- (i) Gail uses different types of networks in her job.  
Look at the diagram for Question 1 (i) (i)  
in the separate Data Book.**

**The diagram shows the different types of  
networks that Gail uses in her job.**

**(3 marks)**

- (i) Draw ONE straight line from EACH type  
of network to the correct reason for its use.**

**(1 mark)**

- (ii) Define the term ‘peer – to – peer’.**

**(1 mark)**

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**Turn over**

**Question 1 continued**

**(iii) Describe the function of Media  
Access Control.  
(2 marks)**

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**(continued on the next page)**



**Question 1 continued**

**(iv) Gail uses wired communication.**

**Explain TWO benefits of using a wired network.**

**(4 marks)**

**BENEFIT 1** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**BENEFIT 2** \_\_\_\_\_

\_\_\_\_\_

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**Question 1 continued**

**(v) Describe how a roaming profile allows Gail to hotdesk.**

**(2 marks)**

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**(Total for Question 1 = 26 marks)**

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**2. Gail uses digital devices for work.**

**(a) Describe how the size of RAM can impact the user experience.**

**(2 marks)**

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**(continued on the next page)**

**Question 2 continued**

- (b) State the number of instructions that can be executed every second by a **3.5 GHz** processor.  
(1 mark)

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- (c) A CD drive is a type of optical storage device.

- (i) Give **TWO OTHER** types of optical storage device.  
(2 marks)

**TYPE 1** \_\_\_\_\_

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**TYPE 2** \_\_\_\_\_

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(continued on the next page)

**Question 2 (c) continued**

- (ii) One disadvantage of optical media is that it has a lower storage capacity than solid state media.

**Explain TWO OTHER disadvantages of using optical media rather than solid state media.**

**(4 marks)**

**Answer space continues on the next page**

**DISADVANTAGE 1** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Question 2 (c) continued**

**DISADVANTAGE 2** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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**(continued on the next page)**

**Question 2 continued**

**(d) Gail's laptop uses memory management.**

- (i) Which ONE of these has the role of managing memory?  
(1 mark)**

☐

**A Applications**

☐

**B Control software**

☐

**C Operating system**

☐

**D Utilities**

**(continued on the next page)**

**Question 2 (d) continued**

- (ii) Explain the purpose of memory management.  
(2 marks)**

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**Question 2 (d) continued**

**(iii) Which ONE of these is the largest amount of data?**  
**(1 mark)**

☐

**A 0.2 GiB**

☐

**B 2000 KiB**

☐

**C 0.02 MiB**

☐

**D 0.002 TiB**

**(continued on the next page)**

**Question 2 (d) continued**

**(iv) There is often no fee required to use open source software.**

**Give TWO OTHER characteristics of open source software.**

**(2 marks)**

**CHARACTERISTIC 1**

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**CHARACTERISTIC 2**

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**(continued on the next page)**

**Question 2 (d) continued**

**(v) Which ONE of these is the purpose of application software?**

**(1 mark)**

☐

**A To carry out tasks for the user**

☐

**B To protect against malware**

☐

**C To secure the operating system**

☐

**D To spool print jobs**

**(continued on the next page)**

**Question 2 (d) continued**

**(vi) Which ONE of these is the reason why screen resolution is important?  
(1 mark)**

☐

**A Higher resolution means larger screens have less pixellation**

☐

**B Higher resolutions cannot be used on larger screen sizes**

☐

**C Larger screens will pixellate more when users are further away**

☐

**D Lower pixellation is achieved with lower resolution screens**

**(Total for Question 2 = 17 marks)**

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**Turn over**

3. The venue promotes events on a website.

- (a) Give TWO OTHER types of online communities the venue could use to promote events.  
(2 marks)

TYPE 1 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

TYPE 2 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(continued on the next page)

**Question 3 continued**

**(b) Which ONE of these causes a risk to online safety?**

**(1 mark)**

☐

**A    Bookmarking**

☐

**B    Legislation**

☐

**C    Misrepresentation**

☐

**D    Vlogging**

**(continued on the next page)**

**Question 3 continued**

- (c) Describe ONE way the website can allow users to control the way their data is used.  
(2 marks)**

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**Question 3 continued**

- (d) Describe ONE personalisation technique the website could provide to users.  
(2 marks)**

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**Question 3 continued**

**(e) Which ONE of these describes data that is given stronger legal protection?**

**(1 mark)**

☐

**A Data that is inaccurate**

☐

**B Data that must be kept for 10 years or more**

☐

**C Data that must be protected against unlawful processing**

☐

**D Data that relates to religious beliefs**

**(continued on the next page)**

**Turn over**

**Question 3 continued**

**(f) Gail uploads new images for the website.**

**(i) Give TWO components of a wired network  
that are required to upload data.**

**(2 marks)**

**COMPONENT 1** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**COMPONENT 2** \_\_\_\_\_

\_\_\_\_\_

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**(continued on the next page)**

**Question 3 (f) continued**

- (ii) Explain ONE reason why the image files should be compressed before uploading to the website.**
- (2 marks)**

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**Question 3 (f) continued**

**(iii) Explain why WPA is better than WEP  
for uploading data.  
(2 marks)**

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**Question 3 (f) continued**

- (iv) Describe ONE method for improving the search rank of the website.  
(2 marks)**

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**Question 3 continued**

- (g) Explain ONE global cause of unequal access to ICT.  
(2 marks)**

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**(Total for Question 3 = 18 marks)**

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**4. Visitors usually bring a digital device to events at the venue.**

**(a) Visitors often take photos and video with the camera on their smartphone and view them on the screen.**

**Describe how visitors could use TWO OTHER features of a smartphone at an event.  
(4 marks)**

**Answer space continues on the next page**

**FEATURE 1** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Question 4 (a) continued**

**FEATURE 2** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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**(continued on the next page)**



**Question 4 continued**

- (b) Describe ONE way a visitor can use features of a tablet to connect it to a smartphone's mobile broadband connection.**

**(2 marks)**

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**(continued on the next page)**

**Question 4 continued**

**(c) The venue uses a barcode scanner that connects to the booking system.**

**(i) Explain ONE benefit to the venue staff of using a barcode scanner.**

**(2 marks)**

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**(continued on the next page)**

**Question 4 (c) continued**

- (ii) Which ONE of these would represent the amount of data required to be sent by the barcode scanner to the booking system?  
(1 mark)

☐

**A** Byte

☐

**B** Gibibyte

☐

**C** Mebibyte

☐

**D** Tebibyte

**(continued on the next page)**

**Question 4 (c) continued**

- (iii) The barcode scanner will be used in places where hundreds of mobile digital devices will be using wireless communication.**

**Explain the benefit of using wired communication rather than wireless communication between the barcode scanner and the booking system.**

**(2 marks)**

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**(continued on the next page)**

**Question 4 (c) continued**

- (iv) Give TWO benefits of hosting the booking system in the cloud.  
(2 marks)**

**BENEFIT 1** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**BENEFIT 2** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**(continued on the next page)**

**Question 4 continued**

**(d) The concert venue uses CCTV.**

**Discuss the legal and ethical implications  
of the use of digital technologies to monitor  
an individual's movements.**

**(8 marks)**

**Answer space continues on the next 3 pages**

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### Question 4 (d) continued

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**Turn over**

### Question 4 (d) continued

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**Question 4 (d) continued**

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**(Total for Question 4 = 21 marks)**

**5. The staff at the venue work online.**

**(a) Explain TWO positive impacts the use of the Internet has on the venue.**

**(4 marks)**

**IMPACT 1** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**IMPACT 2** \_\_\_\_\_

\_\_\_\_\_

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**(continued on the next page)**

**Turn over**

**Question 5 continued**

**(b) Describe ONE method the staff can use to stay safe online.**

**(2 marks)**

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**(continued on the next page)**

**Question 5 continued**

**(c) Explain TWO negative social impacts on the staff of working online.**

**(4 marks)**

**IMPACT 1** \_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**IMPACT 2** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**(continued on the next page)**

**Turn over**

**Question 5 continued**

**(d) Discuss the sustainability issues related to ICT.**

**You should consider these aspects of digital devices in your response:**

- **manufacture**
- **use**
- **disposal**
- **ways of mitigating their environmental impact.**

**(8 marks)**

**Answer space continues on the next 3 pages**

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**Turn over**

### Question 5 (d) continued

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**Turn over**

### Question 5 (d) continued

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**Question 5 (d) continued**

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**(Total for Question 5 = 18 marks)**

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**TOTAL FOR PAPER = 100 MARKS**

**END OF PAPER**

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