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Please check the examination details below before entering your candidate information

Candidate surname	Other names

Centre Number | Candidate Number

Pearson Edexcel International GCSE (9-1)

Thursday 9 November 2023

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

Gail works at a concert venue.

The staff at the venue use ICT for work.



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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)

☒ **A** Database

☒ **B** File management

☒ **C** Spreadsheet

☒ **D** Web authoring

(ii) Which **one** of these is the best choice of computer for a concert venue to use for processing bookings?

(1)

☒ **A** Desktop

☒ **B** Embedded

☒ **C** Mainframe

☒ **D** Tablet

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(b) Explain **one** benefit to **customers** of using an online booking system.

(2)

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(c) Describe the role of encryption software in an online booking system.

(2)

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

(1)

- ☒ **A** Firewall
- ☒ **B** Hub
- ☒ **C** Repeater
- ☒ **D** Router

(e) Which **one** of these is a role of a server?

(1)

- ☒ **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

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(f) Give **two** types of online payment system that customers could use to pay for tickets.

(2)

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(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)

☒ **A** 4G

☒ **B** Bluetooth

☒ **C** NFC

☒ **D** Wi-Fi

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

(2)

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(h) The venue uses an auction site to sell posters.

Give **one** feature of an auction site.

(1)

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(i) Gail uses different types of networks in her job.

(i) Draw **one** straight line from **each** type of network to the correct reason for its use.

(3)

Type of network	Reason for use
PAN	To connect Bluetooth headphones to a smartphone
LAN	To set up a home office network
WAN	To use cloud-based services
	To prevent viruses

(ii) Define the term 'peer-to-peer'.

(1)

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(iii) Describe the function of Media Access Control.

(2)

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(iv) Gail uses wired communication.

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

(4)

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

(2)

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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)

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

(1)

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

(i) Give **two other** types of optical storage device.

(2)

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(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)

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(d) Gail's laptop uses memory management.

(i) Which **one** of these has the role of managing memory?

(1)

- ☒ **A** Applications
- ☒ **B** Control software
- ☒ **C** Operating system
- ☒ **D** Utilities

(ii) Explain the purpose of memory management.

(2)

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

(1)

- ☒ **A** 0.2 GiB
- ☒ **B** 2000 KiB
- ☒ **C** 0.02 MiB
- ☒ **D** 0.002 TiB

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

Give **two other** characteristics of open source software.

(2)

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

(1)

- ☒ **A** To carry out tasks for the user
- ☒ **B** To protect against malware
- ☒ **C** To secure the operating system
- ☒ **D** To spool print jobs

(vi) Which **one** of these is the reason why screen resolution is important?

(1)

- ☒ **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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3 The venue promotes events on a website.

(a) Give **two other** types of online communities the venue could use to promote events.

(2)

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

(1)

- ☒ **A** Bookmarking
- ☒ **B** Legislation
- ☒ **C** Misrepresentation
- ☒ **D** Vlogging

(c) Describe **one** way the website can allow users to control the way their data is used.

(2)

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(d) Describe **one** personalisation technique the website could provide to users.

(2)

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

(1)

- ☒ **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

(f) Gail uploads new images for the website.

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

(2)

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(ii) Explain **one** reason why the image files should be compressed before uploading to the website.

(2)

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

(2)

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(iv) Describe **one** method for improving the search rank of the website.

(2)

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(g) Explain **one** global cause of unequal access to ICT.

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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)

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

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(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)

(ii) Which **one** of these would represent the amount of data required to be sent by the barcode scanner to the booking system?

(1)

- ☒ **A** Byte
- ☒ **B** Gibibyte
- ☒ **C** Mebibyte
- ☒ **D** Tebibyte

(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)

(iv) Give **two** benefits of hosting the booking system in the cloud.

(2)

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(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)

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(Total for Question 4 = 21 marks)

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5 The staff at the venue work online.

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

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

(2)

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

(4)

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(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)

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(Total for Question 5 = 18 marks)

TOTAL FOR PAPER = 100 MARKS

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