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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 May 2024

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

Joe works as a radio show presenter.



(Source: AL1510826)

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1 Joe streams a radio show online.

(a) State **one** type of input device that would be used to capture Joe's voice.

(1)

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(b) Joe must reduce latency when connecting an input device to a computer.

(i) Which **one** of these is the best choice of connectivity for this?

(1)

- ☒ A Bluetooth
- ☒ **B** NFC
- ☒ **C** USB
- ☒ **D** Wi-Fi

(ii) Which **one** of these is the effect of latency?

(1)

- ☒ A Delayed sound
- ☒ **B** Increased volume
- ☒ **C** Longer playback
- ☒ **D** Lower frequency

(c) Describe what is meant by 'streaming'.

(2)

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(d) State the type of network required to stream the show to listeners outside of Joe's LAN.

(1)

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(e) Explain **one** way copyright legislation affects how the listener can use a recording of Joe's radio show.

(2)

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(f) Joe's computer has 8 GiB of RAM.
Each recording uses 300 MiB of RAM.

(i) Construct an expression to show how many recordings can be stored in RAM at once.

(2)

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(ii) Which **one** of these is a benefit to Joe of increasing RAM?

(1)

☒ A He does not have to save recordings as frequently

☒ **B** Increased processor speed

☒ **C** Recordings will be higher quality

☒ **D** There is less need to back up recordings

(iii) State **two** benefits of using storage, rather than RAM, to save the radio shows.

(2)

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(iv) Which **one** of these does the 'A' stand for in RAM?

(1)

- ☒ A Access
- ☒ **B** All
- ☒ **C** Array
- ☒ **D** Available

(v) State the reason why RAM and ROM are called 'Random'.

(1)

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(g) The audio data is processed.

(i) State how the speed of a processor is measured.

(1)

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(ii) State **one** feature of a laptop that provides expansion capability for audio processing.

(1)

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(h) Listeners can subscribe to get notifications about new shows.

(i) State **one** risk to personal information when subscribing.

(1)

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(ii) Describe **one** way a listener can secure their personal information.

(2)

(iii) There are legal requirements for storing personal information.
Explain **two** specific legal requirements Joe must comply with when storing a listener's personal information.

(4)

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(iv) Users who subscribe to Joe's show are shown other content they could subscribe to.

Describe how an online service can offer the **most relevant** content to users.

(2)

(Total for Question 1 = 26 marks)

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2 Joe posts a link to the shows on an online community.

(a) Explain **one** reason Joe does not upload posts that include videos when streaming a show.

(2)

(b) Which **one** of these is the best choice of online community for Joe to use?

(1)

- ☒ A Online gaming
- ☐ **B** Social bookmarking
- ☐ **C** VLE
- ☐ **D** Wiki

(c) Anonymity is a threat to the safety of members of online communities.

(i) State **one other** threat to members of online communities.

(1)

(ii) Describe **one** way that moderators can improve the safety of online communities.

(2)

(iii) State the purpose of an acceptable use policy.

(1)

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(d) Describe how **one** key feature of a social network is used to create communities.

(2)

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(e) People find information online.

(i) Which **one** of these would negatively affect the fitness for purpose of information found in online communities?

(1)

- ☒ A Bias
- ☒ **B** Collaboration
- ☒ **C** Encryption
- ☒ **D** Plagiarism

(ii) State **two** methods people can use to check the reliability of online information.

(2)

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(iii) Which **one** of these can be used to avoid plagiarism?

(1)

- ☒ A Copy and paste
- ☒ **B** Copyrighting
- ☒ **C** Paraphrasing
- ☒ **D** Secondary source

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(f) Describe **one** way the features of an online community can improve the reach of Joe's post.

(2)

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(g) Which **one** of these should a user do to improve their online safety?

(1)

- ☒ A Downvote comments
- ☐ **B** Enable location sharing
- ☐ **C** Share less information
- ☐ **D** Take regular breaks

(Total for Question 2 = 16 marks)

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3 Joe connects to different types of networks.

(a) Joe connects to the Internet.

(i) State the purpose of an ISP.

(1)

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(ii) Joe connects a laptop to a wireless access point.

State **two** additional components of a network required to connect the laptop to the Internet.

(2)

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(iii) Describe the role of a web browser when connecting to the Internet.

(2)

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(iv) State **one** use of an IP address.

(1)

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(v) Explain **one** benefit of using Media Access Control (MAC) rather than an IP address.

(2)

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(b) Joe uses networks to stream his show.

(i) Give **two** types of wireless connectivity that Joe could use to connect a laptop to a smartphone.

(2)

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(ii) Explain **one** reason why Joe must use a WAN to stream a show.

(2)

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(c) Joe uses GPS.

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

(1)

☒ A Data must be sent to multiple satellites for accuracy

☒ **B** Devices cannot connect to a network without GPS

☒ **C** GPS calculations require data from one GPS satellite

☒ **D** The GPS system does not receive data from Joe's devices

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(ii) Which **one** of these is a reason why Joe would use GPS?

(1)

- ☒ A To connect to a wide area network
- ☒ **B** To include location data in image files
- ☒ **C** To prevent access to files by the general public
- ☒ **D** To provide a connection if a mobile phone network fails

(d) Describe **one** role of a server in a client-server network.

(2)

(e) Explain **one** benefit of using a client-server network rather than a peer-peer network.

(2)

(f) Explain **one** benefit to Joe of using a VPN to connect to the radio station's network.

(2)

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(g) Joe's laptop uses a wired connection to the Internet through broadband.

Joe's smartphone has mobile broadband connectivity.

The laptop loses its connection to the Internet.

Describe **one** method Joe could use to keep the laptop online.

(2)

(h) Joe checks the new connection and gets these results:

21.65 Mbps download	0.07 Mbps upload

Explain the impact these results have on the experience of Joe's audience.

(2)

(Total for Question 3 = 24 marks)

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4 Joe uses a laptop to record audio.

(a) Which **one** of these would represent the minimum amount of data required to store a one-hour, uncompressed audio recording?

(1)

- ☒ A Byte
- ☐ **B** Gibibyte
- ☐ **C** Kibibyte
- ☐ **D** Mebibyte

(b) State **one** operating system function used during audio recording.

(1)

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(c) Explain **one** benefit to Joe of using open-source audio recording software.

(2)

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(d) Explain **two** reasons why Joe updates software.

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(e) Joe travels to play music at venues around the country and takes a music collection.

Discuss the benefits and drawbacks of the different storage media types available to Joe.

You should consider these points in your response:

- different types of storage device
- portability
- capacity
- compatibility
- durability.

(8)

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(Total for Question 4 = 16 marks)

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5 Joe's use of digital technologies has implications.

(a) State **two** causes of the digital divide.

(2)

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(b) Explain **two** negative social **impacts** of limited availability of the Internet.

(4)

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(c) Joe's radio show is available online.

Explain **two** negative environmental **impacts** of this.

(4)

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(d) Joe's show is available as a radio broadcast and also online.

Discuss how the reliability of broadcast information compares to the reliability of information only available online.

You should consider these points in your response:

- government oversight / regulation
- responsibility of users
- methods available to verify information.

(8)

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(Total for Question 5 = 18 marks)

TOTAL FOR PAPER = 100 MARKS

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