

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

Total Marks

**Information and Communication
Technology (ICT)**
PAPER 1: Written Paper

Thursday 9 May 2024 – Afternoon
Time: 1 hour 30 minutes

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

Surname					
Other names					
Centre Number					
Candidate Number					

YOU MUST HAVE

Nil.

YOU WILL BE GIVEN

A separate Data Book.

INSTRUCTIONS

- **Answer ALL the 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.**

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 ☐.

1. Look at the Photograph in the separate Data Book.

Joe works as a radio show presenter.

Joe streams a radio show online.

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

(1 mark)

(continued on the next page)

Question 1 continued

(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 mark)

☐

A Bluetooth

☐

B NFC

☐

C USB

☐

D Wi – Fi

(continued on the next page)

Turn over

Question 1 (b) continued

**(b) (ii) Which ONE of these is the effect of latency?
(1 mark)**

☐

A Delayed sound

☐

B Increased volume

☐

C Longer playback

☐

D Lower frequency

(continued on the next page)

Turn over

Question 1 continued

- (c) Describe what is meant by 'streaming'.
(2 marks)**

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

(continued on the next page)

Turn over

Question 1 continued

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

(2 marks)

(continued on the next page)

Turn over

Question 1 continued

- (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 marks)**

(continued on the next page)

Question 1 (f) continued

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

(1 mark)

☐

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

(continued on the next page)

Turn over

Question 1 (f) continued

(iii) State TWO benefits of using storage, rather than RAM, to save the radio shows.
(2 marks)

BENEFIT 1 _____

BENEFIT 2 _____

(continued on the next page)

Question 1 (f) continued

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

(1 mark)

☐

A Access

☐

B All

☐

C Array

☐

D Available

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

[1 mark]

continued on the next page . . .

Turn over

Question 1 continued

1. (g) The audio data is processed.

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

(1 mark)

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

(1 mark)

(continued on the next page)

Question 1 continued

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

(i) State ONE risk to personal information when subscribing.

(1 mark)

(continued on the next page)

Question 1 (h) continued

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

(2 marks)

(continued on the next page)

Question 1 (h) continued

(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 marks)

Answer space continues on the next page

REQUIREMENT 1 _____

Question 1 (h) (iii) continued

REQUIREMENT 2

(continued on the next page)

Question 1 (h) continued

(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 marks)

(Total for Question 1 = 26 marks)



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 marks)

(continued on the next page)

Question 2 continued

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

(1 mark)

☐

A Online gaming

☐

B Social bookmarking

☐

C VLE

☐

D Wiki

(continued on the next page)

Turn over

Question 2 continued

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

(i) State ONE OTHER threat to members of online communities.

(1 mark)

(continued on the next page)

Question 2 (c) continued

- (ii) Describe ONE way that moderators can improve the safety of online communities.
(2 marks)**

- (iii) State the purpose of an acceptable use policy.
(1 mark)**

(continued on the next page)

Turn over

Question 2 continued

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

(2 marks)

(continued on the next page)

Question 2 continued

(e) People find information online.

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

(1 mark)

☐

A Bias

☐

B Collaboration

☐

C Encryption

☐

D Plagiarism

(continued on the next page)

Question 2 (e) continued

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

(2 marks)

METHOD 1 _____

METHOD 2 _____

(continued on the next page)

Question 2 (e) continued

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

(1 mark)

☐

A Copy and paste

☐

B Copyrighting

☐

C Paraphrasing

☐

D Secondary source

(continued on the next page)

Question 2 continued

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

(continued on the next page)

Question 2 continued

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

(1 mark)

☐

A Downvote comments

☐

B Enable location sharing

☐

C Share less information

☐

D Take regular breaks

(Total for Question 2 = 16 marks)

Turn over

3. Joe connects to different types of networks.

(a) Joe connects to the Internet.

(i) State the purpose of an ISP.

(1 mark)

(continued on the next page)

Question 3 (a) continued

- (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 marks)

COMPONENT 1 _____

COMPONENT 2 _____

(continued on the next page)

Question 3 (a) continued

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

(2 marks)

(continued on the next page)

Question 3 (a) continued

(iv) State ONE use of an IP address.

(1 mark)

(continued on the next page)

Question 3 (a) continued

- (v) Explain ONE benefit of using Media Access Control (MAC) rather than an IP address.
(2 marks)**

(continued on the next page)

Question 3 continued

(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 marks)

TYPE 1 _____

TYPE 2 _____

(continued on the next page)

Question 3 (b) continued

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

(2 marks)

(continued on the next page)

Question 3 continued

(c) Joe uses GPS.

(i) Which ONE of these statements about GPS is TRUE?

(1 mark)

☐

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

(continued on the next page)

Turn over

Question 3 (c) continued

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

(1 mark)

☐

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

(continued on the next page)

Turn over

Question 3 continued

(d) Describe ONE role of a server in a client – server network.

(2 marks)

(continued on the next page)

Question 3 continued

- (e) Explain ONE benefit of using a client – server network rather than a peer – peer network.
(2 marks)**

(continued on the next page)

Question 3 continued

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

(2 marks)

(continued on the next page)

Question 3 continued

(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 marks)

(continued on the next page)

Question 3 continued

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

21.65	0.07
Mbps download	Mbps upload

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

(2 marks)

(Total for Question 3 = 24 marks)

Turn over

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 mark)

☐

A Byte

☐

B Gibibyte

☐

C Kibibyte

☐

D Mebibyte

(continued on the next page)

Question 4 continued

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

(1 mark)

(c) Explain ONE benefit to Joe of using open – source audio recording software.

(2 marks)

(continued on the next page)

Turn over

Question 4 continued

**(d) Explain TWO reasons why Joe updates software.
(4 marks)**

REASON 1 _____

REASON 2 _____

(continued on the next page)

Turn over

Question 4 continued

- (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 marks)

Answer space continues on the next three pages.

Turn over

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Turn over

[illegible]

Turn over

[illegible]

(Total for Question 4 = 16 marks)

Turn over

5. Joe's use of digital technologies has implications.

(a) State TWO causes of the digital divide.

(2 marks)

CAUSE 1 _____

CAUSE 2 _____

(continued on the next page)

Question 5 continued

(b) Explain TWO negative social IMPACTS of limited availability of the Internet.

(4 marks)

IMPACT 1 _____

IMPACT 2 _____

(continued on the next page)

Turn over

Question 5 continued

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

**Explain TWO negative environmental IMPACTS
of this.**

(4 marks)

IMPACT 1 _____

IMPACT 2 _____

(continued on the next page)

Turn over

Question 5 continued

- (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 marks)

Answer space continues on the next four pages.

Turn over

Question 5 (d) continued

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Question 5 (d) continued

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Turn over

Question 5 (d) continued

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Question 5 (d) continued

(Total for Question 5 = 18 marks)

TOTAL FOR PAPER = 100 MARKS

END OF PAPER
