Pearson Edexcel International GCSE (9–1)

Time 1 hour 30 minutes

Paper reference **4IT1/01R**

Information and Communication Technology (ICT)

PAPER 1: Written Paper

June 2022

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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Pearson

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 ☒.

Nihal travels for work and holidays.
He uses ICT to plan his travel and for entertainment.

1 Nihal uses a camera and camcorder when travelling.

(a) State **one** use of a camcorder.

(1)

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(b) Which **one** of these is a wired connectivity type?

(1)

    ☒ **A** GPS

    ☒ **B** USB

    ☒ **C** WEP

    ☒ **D** Wi-Fi

(c) Which **one** of these is a reason why Wi-Fi is a better choice than Bluetooth for transferring files?

(1)

    ☒ **A** Data cannot be intercepted

    ☒ **B** Higher bandwidth

    ☒ **C** Higher latency

    ☒ **D** Only works with secure files

(d) Nihal uses a social network to send photographs of his holiday to his friends.

(i) Explain **one** drawback to Nihal of sharing his photographs online using a social network rather than using email.

(2)

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(ii) State who owns the copyright to Nihal's photographs.

(1)

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(e) Nihal uses a camera with a 64 GiB memory card.

Each photograph uses 2 MiB of storage.

(i) Construct an expression to show how many photographs can be stored on the memory card.

(2)

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(ii) Which **one** of these is a benefit of using a memory card?

(1)

☒ **A** Easier to connect to a network

☒ **B** Easier to expand available storage

☒ **C** Files will be named automatically

☒ **D** Only image data can be stored

(iii) State the type of memory used to store the camera's start-up instructions.

(1)

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(iv) State **one** type of utility software that will reduce the size of each photograph.

(1)

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(f) Explain **one** disadvantage of increasing the speed of the camera's processor.

(2)

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(g) Flash memory is non-volatile.

(i) State **two other** characteristics of flash memory.

(2)

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(ii) Describe how a flash memory device stores data.

(2)

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(iii) State why flash memory must be non-volatile.

(1)

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(iv) State the type of memory that is volatile.

(1)

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(h) State **one** advantage of using a Blu-ray disk rather than a CD.

(1)

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(i) A camera is an example of a product that uses an embedded system.

Give **one** use of an embedded system in a camera.

(1)

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(Total for Question 1 = 21 marks)

2 Nihal arrives at a hotel.

(a) Nihal fills in a form at the hotel reception desk.

State **one** use of OCR.

(1)

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(b) Nihal connects his laptop to the hotel's local area network.

(i) Explain **one** advantage of using Media Access Control (MAC) addresses rather than Internet Protocol (IP) addresses to identify devices on a local area network.

(2)

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(ii) State **two** issues caused by not identifying devices correctly on a network.

(2)

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2 ....

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(iii) Complete this sentence by adding the correct network devices.

(2)

A local area network uses a .... to connect devices,

whereas a wide area network uses a .... to connect local area networks.

(iv) Explain **one** disadvantage of connecting a printer to a network.

(2)

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(v) Draw **one** straight line from **each** method of protecting a network to the correct description.

(3)

Method

CAPTCHA tests

Encryption

Firewall

Description

Checks data as it arrives at a network

Checks that users are human

Prevents data from being intercepted

Processes plain text

(vi) Which **one** of these is an example of a device that connects using a personal area network?

(1)

☒ **A** Hard drive

☒ **B** Router

☒ **C** Server

☒ **D** Smartphone

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(c) Nihal streams a film using a low bandwidth connection.

Explain why reducing the bit rate of the file improves the user experience.

(2)

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(d) Describe low latency.

(2)

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(e) The hotel's computers are shared between users. The network manager has administrator privileges.

(i) Describe how the network manager can make sure users cannot see each other's data.

(2)

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(ii) Describe **one** way that the network manager can make sure the hotel still has access to its data if a storage server was flooded by water.

(2)

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(f) The hotel staff use project management software.

State the feature of project management software that gives a timeline of all dependent tasks.

(1)

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(Total for Question 2 = 22 marks)

3 Nihal uses an online banking service.

(a) (i) List **two** features of an online banking service.

(2)

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(ii) Describe **one** benefit to Nihal of online targeted marketing.

(2)

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(b) Which **one** of these enables transaction tracking?

(1)

- ☒ **A** Authentication
- ☒ **B** Backups
- ☒ **C** Cookies
- ☒ **D** Encryption

(c) Which **one** of these describes unsafe practice when using online systems?

(1)

- ☒ **A** Anonymising posts
- ☒ **B** Copyrighting video
- ☒ **C** Geotagging photos
- ☒ **D** Plagiarising text

(d) Some users meet people online who have a narrower range of views than people they meet in real life.

(i) State **one** reason for this.

(1)

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(ii) Explain **two other** negative impacts of increased access to the Internet.

(4)

1 ....

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(iii) Which **one** of these is used by social networks to improve the safety of users?

(1)

☒ **A** Customised avatars

☒ **B** Moderators

☒ **C** Time-limited posts

☒ **D** User ratings

(e) Nihal reads a positive review of the hotel on a social networking site.

(i) List **two other** types of online community that Nihal could use to find out more about the hotel.

(2)

1 ....

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2 ....

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(ii) Describe **one** way Nihal could evaluate if a review is trustworthy.

(2)

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(Total for Question 3 = 16 marks)

4 Nihal uses the Internet for work.

(a) Nihal uses the Internet to update the skills he needs for his work.

Describe **one other** way using the Internet has had a positive impact on employment.

(2)

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(b) Nihal's employer uses hosted storage.

(i) Explain **one** drawback to Nihal's employer of doing this.

(2)

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(ii) Which **one** of these is the best choice to perform complex processing tasks?

(1)

☒ **A** Desktop replacement

☒ **B** Embedded system

☒ **C** Games console

☒ **D** Mainframe

(c) Describe the role of a web browser when accessing a website.

(2)

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(d) Nihal uses this word as his password.

<div align="center">Aeroplane</div>

Identify **two** features that make this a weak password.

(2)

1 ....

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2 ....

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(e) Explain **why** phishing messages are sent to many users.

(2)

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(f) State **one** way the use of batteries can damage the environment.

(1)

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(g) Discuss how ICT is used to protect payment systems.

(8)

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(Total for Question 4 = 20 marks)

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5 Nihal downloads communication software to his laptop.

(a) Give **two** features of a computer that are required to download software.

(2)

1 ....

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2 ....

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(b) Explain **two** ways the Internet has improved communication for organisations.

(4)

1 ....

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(c) Describe how **one** disability can be supported by configuring applications software.

(2)

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(d) List **two** reasons for updating system software.

(2)

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2 ....

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(e) Explain **one** reason why compression should be used on files before backing up.

(2)

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(f) State the type of utility software that reorganises where data is stored on a magnetic disk.

(1)

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P 7 1 5 5 4 A 0 1 9 2 4

(g) Discuss the advantages and disadvantages of using sensors to make decisions for car drivers.

(8)

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(Total for Question 5 = 21 marks)

TOTAL FOR PAPER = 100 MARKS

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