

Paper Reference 4IT1/01

Pearson Edexcel

International GCSE (9 – 1)

INFORMATION AND

COMMUNICATION TECHNOLOGY (ICT)

PAPER 1: WRITTEN PAPER

Monday 13 May 2019 – Morning

**TIME: 1 hour 30 minutes plus your additional
time allowance.**

Total Marks

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

Surname					
Other names					
Centre Number					
Candidate Number					

ITEMS INCLUDED WITH QUESTION PAPERS

- A separate Data Booklet.
- A separate Spare Data Booklet.

INSTRUCTIONS

- Use **BLACK** ink, **BLACK** ball – point pen, **BLACK** felt tip or your usual method.
- Answer **ALL** questions.
- Answer the questions in the spaces provided in this Question Paper or in the Data Booklet – **THERE MAY BE MORE SPACE THAN YOU NEED.**

INFORMATION

- 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.
-

ANSWER ALL QUESTIONS.

**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 ☐.**

**Look at the photograph in the separate Data Booklet.
The photograph shows five young adults (two male and
three female) sitting on a park bench, smiling and using
different technology devices. The three females are
holding smartphones and the two males are looking at a
tablet computer.**

Question 1 is on the next page.

Turn over

1. Kiki buys a smartphone.

(a) The smartphone uses a sensor that detects movement of the device.

One way in which the smartphone uses data from the sensor is to switch itself off if dropped.

Give TWO OTHER ways in which the smartphone could use data from the sensor.

(2 marks)

WAY 1. _____

WAY 2. _____

Question 1 (b) is on the next page.

Turn over

1. (b) Smartphones can be connected using wired or wireless methods.

(i) Give TWO advantages to Kiki of using a WIRED method to connect to the smartphone.

(2 marks)

ADVANTAGE 1. _____

ADVANTAGE 2. _____

Question 1 (b) (ii) is on the next page.

Turn over

1. (b) (ii) Give TWO advantages to Kiki of using a WIRELESS method to connect to the smartphone.

(2 marks)

ADVANTAGE 1. _____

ADVANTAGE 2. _____

Question 1 (c) is on the next page.

Turn over

1. (c) The smartphone uses a SIM card.

Which ONE of these is a type of connectivity that the SIM card provides?

(1 mark)

☐

A WLAN

☐

B Bluetooth

☐

C Infrared

☐

D 4G

Question 1 (d) is on the next page.

Turn over

1. (d) Kiki meets her friend, Zara.

- (i) On the blank sheet provided for Question 1 (d) (i) in the separate Data Booklet, draw a diagram to show how Kiki's smartphone can be used to provide Zara's tablet computer with an Internet connection. Label each component and the connectivity you use in your diagram.

(4 marks)

Question 1 (d) (ii) is on the next page.

1. (d) (ii) Explain why sharing an Internet connection would affect the bandwidth available to Kiki's smartphone.

(2 marks)

- (e) Kiki's smartphone and Zara's tablet computer share a lot of the same functionality.

State the term used to describe this.

(1 mark)

Turn over

1. (f) The smartphone has a 4 **GHz** CPU.

Describe the function of a CPU.

(2 marks)

Question 1 (g) is on the next page.

1. (g) The smartphone uses application software.

Describe the purpose of application software.

(2 marks)

Question 1 (h) is on the next page.

1. (h) Explain ONE benefit of using solid state storage with a smartphone.

(2 marks)

Question 1 (i) is on the next page.

1. (i) Kiki's smartphone uses an open source operating system.

Which ONE of these describes the source code in an open source operating system?

(1 mark)

☐

A It is owned by a company

☐

B It is made available to users

☐

C It is more secure

☐

D It uses less processing power

(TOTAL FOR QUESTION 1 = 21 MARKS)

Question 2 is on the next page.

Turn over

2. Zara uses her tablet computer to watch TV online.

(a) Describe the function of a router.

(2 marks)

Question 2 (b) is on the next page.

Turn over

2. (b) State TWO benefits to Zara of online TV.

(2 marks)

BENEFIT 1. _____

BENEFIT 2. _____

Question 2 (c) is on the next page.

Turn over

2. (c) Look at **Figure 1** for Question 2 (c) in the separate Data Booklet.

Zara streams an online video.

She sees the notice shown in **Figure 1**.

Describe what has happened to Zara.

(4 marks)

Turn over

2. (d) Give TWO benefits to Zara of connecting her tablet computer to her television.

(2 marks)

BENEFIT 1. _____

BENEFIT 2. _____

Question 2 (e) is on the next page.

Turn over

2. (e) Zara uses a PIN to unlock her tablet computer.

List **THREE OTHER** methods she could use to prevent unauthorised access to her data.

(3 marks)

METHOD 1. _____

METHOD 2. _____

METHOD 3. _____

Question 2 (f) is on the next page.

Turn over

2. (f) Explain ONE advantage of using hosted applications with tablet computers.

(2 marks)

Question 2 (g) is on the next page.

2. (g) Explain ONE advantage of using locally installed applications.

(2 marks)

(TOTAL FOR QUESTION 2 = 17 MARKS)

Question 3 is on the next page.

Turn over

3. Ruwan uses a smartwatch when he exercises.

(a) The smartwatch can connect to a Bluetooth health monitor.

Which ONE of these describes Bluetooth?

(1 mark)

☐

A A high speed wired connection

☐

B A high resolution connection

☐

C A type of wireless connection

☐

D An energy saving connection

Question 3 (b) is on the next page.

Turn over

3. (b) The health monitor uses Bluetooth to transfer data to the smartwatch.

(i) Explain why Bluetooth rather than infrared is used for this transfer.

(2 marks)

Question 3 (b) (ii) is on the next page.

Turn over

3. (b) (ii) Give TWO factors that might affect the speed of the transfer.

(2 marks)

FACTOR 1. _____

FACTOR 2. _____

Question 3 (c) is on the next page.

Turn over

3. (c) Some data needs to be encrypted when it is transferred.

Describe how encryption helps keep data secure.

(2 marks)

Question 3 (d) is on the next page.

3. (d) Ruwan's smartwatch uses GPS to monitor his location.

Give TWO pieces of information that could be calculated using GPS data.

(2 marks)

PIECE 1. _____

PIECE 2. _____

Question 3 (e) is on the next page.

Turn over

3. (e) Some social networking services use GPS data.

Describe how the use of GPS data could place social network users at risk.

(2 marks)

Question 3 (f) is on the next page.

Turn over

3. (f) The health monitor stores **4 MiB** of data.

Construct an expression to show how many bits are in **4 MiB**.

(3 marks)

Question 3 (g) is on the next page.

Turn over

3. (g) Ruwan purchased his smartwatch online.

Describe TWO ways in which the Internet can impact positively on companies that sell goods.

(4 marks)

WAY 1. _____

WAY 2. _____

(TOTAL FOR QUESTION 3 = 18 MARKS)

Turn over

4. Ruwan searches online for local sporting events.

(a) Ruwan evaluates the fitness for purpose of the search results.

(i) Look at the table for Question 4 (a) (i) in the separate Data Booklet.

Complete the table to show how each property can NEGATIVELY affect the fitness for purpose of information.

(3 marks)

Question 4 (a) (ii) is on the next page.

4. (a) (ii) Which ONE of these is another property of information that affects fitness for purpose?

(1 mark)

☐

A Cost

☐

B Keyword

☐

C Plagiarism

☐

D Relevance

Question 4 (a) (iii) is on the next page.

Turn over

4. (a) (iii) Which ONE of these would improve the ranking of a search result?

(1 mark)

☐

A Acknowledged sources

☐

B Alphabetical search terms

☐

C Copyrighted material

☐

D Sponsored adverts

Question 4 (b) is on the next page.

Turn over

4. (b) Explain why Ruwan must consider his use of keywords when using a search engine.

(2 marks)

Question 4 (c) is on the next page.

4. (c) Zara enters the same search term as Ruwan but receives different results.

Explain why Zara receives different results.

(2 marks)

Question 4 (d) is on the next page.

4. (d) Which ONE of these is a protocol used to transfer data on the Internet?

(1 mark)

☐

A ISP

☐

B HTTPS

☐

C HTML

☐

D VPN

Question 4 (e) is on the next page.

Turn over

4. (e) Describe how MAC addresses can be used to prevent access to networks.

(3 marks)

Question 4 (f) is on the next page.

Turn over

4. (f) Analyse how the use of cloud – based services has impacted on the gap between the information rich and the information poor.

(8 marks)

Turn over

(TOTAL FOR QUESTION 4 = 21 MARKS)

Question 5 is on the next page.

Turn over

5. James teaches in a school that uses a local area network and a wide area network.

(a) Give ONE example of a wide area network.

(1 mark)

(b) Look at the table for Question 5 (b) in the separate Data Booklet.

Some learners have accessibility needs.

Complete the table to describe how TWO peripheral devices designed SPECIFICALLY for accessibility could improve the learning of people with accessibility needs.

(4 marks)

Turn over

5. (c) Describe TWO benefits to teachers of using a local area network.

(4 marks)

BENEFIT 1. _____

BENEFIT 2. _____

Question 5 (d) is on the next page.

Turn over

5. (d) One type of backup procedure the school could use is incremental backup.

State ONE OTHER backup procedure the school could use to secure its data.

(1 mark)

Question 5 (e) is on the next page.

5. (e) Explain the purpose of an acceptable use policy.

(3 marks)

Question 5 (f) is on the next page.

Turn over

5. (f) The learners use communication software.

Describe the purpose of communication software.

(2 marks)

Question 5 (g) is on the next page.

5. (g) Discuss the impact of VLEs on learners.

(8 marks)

[illegible]

Turn over

(TOTAL FOR QUESTION 5 = 23 MARKS)

TOTAL FOR PAPER = 100 MARKS
