**Pearson Edexcel International Award in Lower Secondary**

# Tuesday 30 May 2023

Afternoon (Time: 1 hour 20 minutes)

**Paper reference** LCP11/01

## Computing
**Year 9**
**Achievement Test**

**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 80.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question*.
- You must **NOT** use a calculator.

## 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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## SECTION A

**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** Computers use binary to represent data and program instructions.

State the number of values that can be represented by one binary digit (bit).

..................................................................................................................................................................................

**(Total for Question 1 = 1 mark)**

**2** Which **one** of these is encoded using ASCII?

⊠ **A** Graphics

⊠ **B** Sound

⊠ **C** Text

⊠ **D** Video

**(Total for Question 2 = 1 mark)**

**3** Look at **Figure 1**.

It shows a bitmap image displayed on a computer.
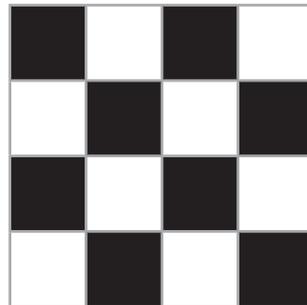


**Figure 1**

The image uses 16 picture elements.

(a) State the term used for a **picture element**.

(1)

..................................................................................................................................................................................

(b) Which **one** of these is a definition of colour depth?

(1)

⊠ **A** The number of bits used to represent each picture element

⊠ **B** The number of colours represented by each picture element

⊠ **C** The number of colours used by the image

⊠ **D** The number of picture elements used by the image

**(Total for Question 3 = 2 marks)**

**4** State the number of bytes in one kibibyte.

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**(Total for Question 4 = 1 mark)**

**5** Explain the benefit of increasing the sample rate when recording sound.

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**(Total for Question 5 = 2 marks)**

**6** Convert the denary integer 97 to 8-bit binary.

**(Total for Question 6 = 2 marks)**

**7** A local area network (LAN) is one **type** of network.

State **two other** types of network.

1 ...................................................................................................................................................................

2 ...................................................................................................................................................................

**(Total for Question 7 = 2 marks)**

**8** Complete the sentence using the correct term from this list.

- Local Area Network

- Uniform Resource Locator

- Universal Serial Bus

- World Wide Web

The term ............................................................................... describes the system on the
Internet that allows users to move between documents using hypertext links.

**(Total for Question 8 = 1 mark)**

**9** Which **one** of these enables the communications of an individual to be monitored?

☒ **A** Eavesdropping

☒ **B** GPS tracking

☒ **C** Identification (ID) card

☒ **D** Virus

**(Total for Question 9 = 1 mark)**

**10** Complete the sentence using the correct word from this list.

- browsers

- computers

- links

- websites

The Internet is a network of connected ........................................................................... .

**(Total for Question 10 = 1 mark)**

**11** Network devices have specialist roles.

Draw **one** straight line from **each** role to the correct device.

**Role**

Connects two networks

Changes a signal so it can be used by different technology

Directs signals to the correct receiving device within a network

**Device**

Desktop computer

Modem

Router

Switch

Wireless access point

**(Total for Question 11 = 3 marks)**

**12** Complete the sentence using the correct words from this list.

- keylogger
- piracy
- plagiarism
- USB
- virus

Malicious ................................................................................ devices can contain

a ................................................................................, which is a type of malware that can intercept data.

**(Total for Question 12 = 2 marks)**

**13** Data is split into packets for transmission across a network.

Which **one** of these is included in a packet header?

- ☒ **A** Decompression instructions
- ☒ **B** Encryption data
- ☒ **C** Image data
- ☒ **D** Sequence number

**(Total for Question 13 = 1 mark)**

**14** A programmer is using abstraction to create a general model.

(a) State **two** ways that abstraction is used to create a general model.

**(2)**

1 ................................................................................................................................................................................................................

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2 ................................................................................................................................................................................................................

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(b) Look at **Figure 2**.

It shows three versions of a character that will be used in a computer game.



**Figure 2**

State **one** feature of the character the programmer **should NOT** include in a general model for the character.

**(1)**

................................................................................................................................................................................................................

**(Total for Question 14 = 3 marks)**

**15** Which **one** of these flowchart boxes always has a Yes path and a No path?

⊠ **A** Decision

⊠ **B** Input

⊠ **C** Process

⊠ **D** Terminator

**(Total for Question 15 = 1 mark)**

**16** Explain **one** way in which the manufacture of digital devices damages the environment.

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**(Total for Question 16 = 2 marks)**

**17** Computer systems use software and hardware.

(a) Which **one** of these is a software licensing type?

(1)

- ☒ **A** Compressed
- ☒ **B** Copyright
- ☒ **C** Plagiarised
- ☒ **D** Proprietary

(b) Complete the sentence using the correct words from this list.

(2)

- anti-virus
- application
- operating
- utility
- file management

Presentation software is a type of ........................................................................................ software and

backup software is a type of ........................................................................................ software.

(c) Give **two** advantages of using hard-disk storage rather than optical disc storage for backing up data.

(2)

1 ...................................................................................................................................................................................................................................................

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2 ...................................................................................................................................................................................................................................................

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(d) State **two** reasons why read only memory (ROM) is used to store a computer's start-up instructions.

(2)

1 ...................................................................................................................................................................................................................................................

...................................................................................................................................................................................................................................................

2 ...................................................................................................................................................................................................................................................

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(e) Look at **Figure 3**.

It shows a smart system that responds to voice commands.



**Figure 3**

(i) Give **two** input devices that are built into the system.

(2)

1 ...........................................................................................................................................................................................

...........................................................................................................................................................................................

2 ...........................................................................................................................................................................................

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(ii) Give **one** output device that is built into the system.

(1)

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**(Total for Question 17 = 10 marks)**

**18** Give **two** arithmetic operators.

1 ................................................................................................................................................................

2 ................................................................................................................................................................

**(Total for Question 18 = 2 marks)**

**19** Which **one** of these uses iteration?

⊠ **A** Assigning a value to a variable

⊠ **B** Comparing two values

⊠ **C** Outputting the result of a calculation

⊠ **D** Repeating an operation

**(Total for Question 19 = 1 mark)**

**20** Here is some Python code.

```
1 switch = True
2 motion = False
3 print (switch or motion)
4 print (switch and motion)
```

(a) State the output of line 3.

**(1)**

................................................................................................................................................................

(b) State the output of line 4.

**(1)**

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**(Total for Question 20 = 2 marks)**

**21** Here is some Python code.

$$"2" + 2$$

Explain what happens when this code is run.

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**(Total for Question 21 = 2 marks)**

**22** A program is required to update a shopping basket.

```
1 shopping = ["bananas", "chocolate", "milk"]
2 del shopping[1]
3 for item in range (1, len(shopping)):
4   print("item")
```

(a) State the data structure used by `shopping`.

**(1)**

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(b) Give the contents of `shopping` after line 2 is executed.

**(1)**

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(c) The program contains two errors.

State the number of the line that has a **logical** error.

**(1)**

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**(Total for Question 22 = 3 marks)**

**23** A program outputs an appropriate message depending on the name entered by the user.

The program outputs "We have the same name!" if the user inputs their name as "ROXIE" or "Roxie".

If the user inputs a different name, the program outputs a message that includes the name entered by the user.

Complete the program by adding Python code on the dotted lines.

```
1 print("Hi, I'm Roxie the Robot!")
2
3 name = input("What's your name? ")
4
5 name = name.............................................................................................................
6
7 if name == "roxie":
8
9    print("We have the same name!")
10
11 else:
12
13   print("Nice to meet you ...........................   ..........................   ...........................................................)
```

**(Total for Question 23 = 4 marks)**

**TOTAL FOR SECTION A = 50 MARKS**

**SECTION B**

**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 ☒.**

**24** A student is using web authoring software.

(a) Complete the **three** missing tags in this HTML code.

(2)

<html>

    <head>

        <title> My school subjects </title>

        </......................................................................>

    <......................................................................>

        <p>

        English

        Maths

        Computing

        </p>

        </......................................................................>

    </html>

(b) Writing HTML code is one way of creating a web page.

State **one other** way of creating a web page.

(1)

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**(Total for Question 24 = 3 marks)**

**25** State **two** types of multimedia content that can be embedded in a presentation.

1 ........................................................................................................................................................

2 ........................................................................................................................................................

**(Total for Question 25 = 2 marks)**

**26** A company uses a database.

(a) Which **one** of these is the data type used to record whether a customer has been contacted?

(1)

☒ **A** Date

☒ **B** Logical

☒ **C** Number

☒ **D** Real

(b) Which **one** of these describes a database with a single table of data?

(1)

☒ **A** Flat file

☒ **B** Primary key

☒ **C** Record

☒ **D** Relational

(c) Which **one** of these is a reason for using a database?

(1)

☒ **A** It allows more data to be entered

☒ **B** It makes it easier to identify trends

☒ **C** It means the information is more relevant to customers

☒ **D** It speeds up printing reports

(d) Give **one** relational operator used in a database query.

(1)

........................................................................................................................................................

**(Total for Question 26 = 4 marks)**

**27** Which **one** of these is a reason for compressing files before uploading them?

☒ **A** Increases the required bandwidth

☒ **B** Notifies friends

☒ **C** Secures files

☒ **D** Speeds up file transfer

**(Total for Question 27 = 1 mark)**

**28** Complete the sentence using the correct word from this list.

• applications

• charts

• patterns

• storage

Analysis is used to find ........................................................................................ in data.

**(Total for Question 28 = 1 mark)**

**29** Look at **Figure 4**.

It shows part of a spreadsheet used to compare mobile phone contracts.

| ◢ | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | |
| 2 | Model | Monthly minutes | Monthly data | Upfront cost | Free gift? | Monthly cost | Contract length (months) | Total cost over contract length |
| 3 | 100A | Unlimited | 30 GB | 29 | No | 40.00 | 24 | 989 |
| 4 | 303C | Unlimited | 50 GB | 0 | Yes | 49.00 | 18 | 882 |
| 5 | 450T | Unlimited | 20 GB | 0 | No | 29.00 | 24 | 696 |
| 6 | 606V | Unlimited | 10 GB | 40 | Yes | 19.00 | 12 | 298 |
| 7 | 909T | Unlimited | 20 GB | 99 | Yes | 30.00 | 24 | 819 |

**Figure 4**

(a) State the letter of the column that holds numbers formatted as decimals.

**(1)**

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(b) A chart is needed to display the total cost of each model over the length of the contract.

State the most appropriate type of chart to use for this purpose.

**(1)**

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(c) Complete the formula that is used in cell H3.

**(3)**

= ....................................................................................................

(d) Explain why filtering the sheet by **Monthly minutes** does not help someone choose a phone contract.

**(2)**

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**(Total for Question 29 = 7 marks)**

**30** A graphic designer is creating a logo.

(a) Complete the sentence using the correct words from this list.

**(2)**

- bitmap
- coloured
- pixel
- resized
- vector

The designer should create the logo as a ........................................................................................................

graphic so it can be ................................................................................ without becoming
pixelated.

(b) Which **one** of these icons should be selected to crop an image?

**(1)**

⊠ **A**

⊠ **B**

⊠ **C**

⊠ **D**

(c) State **one** reason why the file type should be considered when saving an image.

**(1)**

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**(Total for Question 30 = 4 marks)**

**31** Businesses use word processing applications to create documents.

(a) Complete the sentence using the correct word from this list.

- complex

- illustrated

- numbered

- short

Memos are ........................................................................................ documents sent to co-workers.

(b) The font style chosen for a document should be easy to read.

(i) Give **one other** reason why a font style should be chosen carefully.

(1)

....................................................................................................................................................................................

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(ii) Give **one** font enhancement that could be used to emphasise a word.

(1)

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**(Total for Question 31 = 3 marks)**

**32** Look at **Figure 5**.

It shows two components for a newsletter.



eMission Zero

**Figure 5**

The text needs to stay the same size.

Explain **one** formatting option that could be used when placing the text on the image.

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**(Total for Question 32 = 2 marks)**

**33** State **one** benefit of using cloud-based storage.

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**(Total for Question 33 = 1 mark)**

**34** Look at **Figure 6**.

This image is used on a poster advertising a petrol station.

Explain why using the callout makes the poster fit for purpose.



**Figure 6**

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**(Total for Question 34 = 2 marks)**

**TOTAL FOR SECTION B = 30 MARKS**
**TOTAL FOR PAPER = 80 MARKS**

P 7 2 0 3 6 A 0 2 0 2 0