Please check the examination details below before entering your candidate information

Candidate surname	Other names

Centre Number | Candidate Number

Pearson Edexcel Level 1/Level 2 GCSE (9–1)

Wednesday 13 May 2026

Afternoon (Time: 1 hour 30 minutes)

Paper reference **1CP2/01**

Computer Science

PAPER 1: Principles of Computer Science

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.*
- You are not allowed to use a calculator.

Information

- The total mark for this paper is 75.
- 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 ▶

P75440A

©2026 Pearson Education Ltd.

P:1/1/1/1/1/1/

P 7 5 4 4 0 A 0 1 2 0

Pearson

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

BLANK PAGE

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

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 Issues and impact

(a) Intellectual property rights can be protected.

State **two** methods that can be used to protect the intellectual property of program code.

(2)

1 .....

2 .....

(b) Data protection legislation gives individuals rights such as the right to be forgotten.

Give **two other** rights that individuals have under this legislation.

(2)

1 .....

.....

2 .....

.....

(c) Identify the type of malware that can replicate itself without user interaction.

(1)

☒ **A** Keylogger

☒ **B** Trojan

☒ **C** Virus

☒ **D** Worm

(d) Social engineering attacks can be used to gain confidential information.

Complete the table to identify the social engineering method used for **each** attack.

(4)

Description of attack	Social engineering method
Josh receives an email that appears to come from his bank. The email contains a link to a fake website.	
Nina has a message pop up on her computer saying it has a virus. The message has a link to a website that offers to fix her computer for free.	
Arav receives a call from someone claiming to be from his phone company. He is asked to confirm his personal details.	
Livi visits a website and is told that she is today's winner. She is asked to enter her login details.	

(e) Explain **one** outcome of algorithmic bias in machine learning.

(2)

.....

.....

.....

.....

.....

.....

(Total for Question 1 = 11 marks)

DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

2 Computational thinking

(a) Programmers use variables and operators in their programs.

(i) Define the term 'variable'.

(2)

.....

.....

.....

.....

(ii) Complete the table to give the type of operator for **each** example.

(3)

Example	Type of operator
** //	
AND OR	
== >=	

(b) Identify what is meant by the term 'pseudocode'.

(1)

☒ **A** A diagram representing an algorithm

☒ **B** A language that has a specific syntax

☒ **C** A problem broken down into smaller more manageable parts

☒ **D** An informal written description of an algorithm

(c) Here is an algorithm.

```
1  month = 0
2  month = int (input ("Enter month of year (1-12)"))
3
4  if (month < 1) or (month > 12):
5      print ("Invalid input")
6  elif (month == 1) or (month == 12):
7      print ("Dark")
8  elif (month >= 5) and (month <= 8):
9      print ("Light")
10 else:
11     print ("Interim")
```

Complete the table to show the output for the given input.

(2)

Input	Output
8	
12	

(d) Runtime errors cause programs to terminate unexpectedly.

Give **two** examples of operations that can cause runtime errors.

(2)

1 .....

.....

2 .....

.....

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

(e) A bubble sort is used to sort a list of colours into **ascending** order.

Complete the table to show **each** swap that takes place during the bubble sort.

Each row should contain a **single** swap.

You may not need to fill in all the rows in the table.

(3)

Swap	Red	Orange	Green	Yellow
1				
2				
3				
4				
5				
6				

(f) Explain the effect on the use of memory when a merge sort is used instead of a bubble sort.

(2)

.....

.....

.....

.....

.....

.....

(Total for Question 2 = 15 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

3 Networks

(a) Define the term 'computer network'.

(2)

.....

.....

.....

.....

(b) Identify the correct definition of 'bandwidth'.

(1)

- ☒ **A** The delay between a signal being sent and received
- ☒ **B** The maximum capacity of a network channel
- ☒ **C** The maximum distance a signal can reach
- ☒ **D** The protocol that defines how data is transmitted

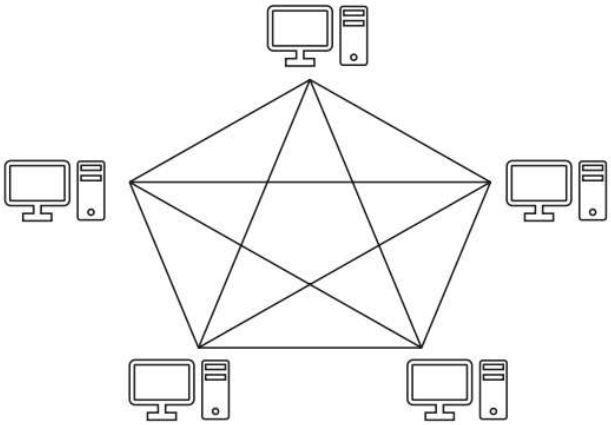
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

(c) The diagram shows a network topology.



(i) Name this topology.

(1)

.....

.....

(ii) Give **two** benefits of this topology.

(2)

1 .....

.....

2 .....

.....

(d) A company can test the security of its network in different ways.

Describe how white box penetration testing is performed.

(2)

(e) A file takes 40 minutes to transmit across a network that has a transmission rate of 5.5 megabits per second.

Construct an expression to show the size of the file in gibibytes.

You do **not** need to do the calculation.

(4)

(Total for Question 3 = 12 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

4 Data

(a) Here are two images.

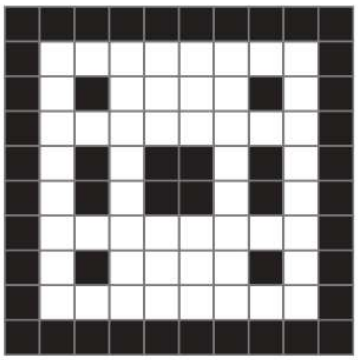


Image A

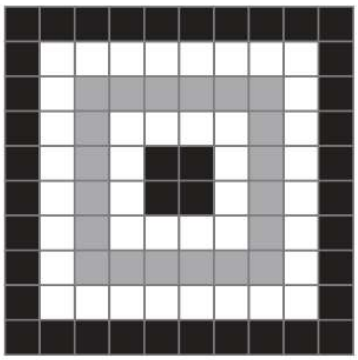


Image B

(i) State the number of pixels in image A.

(1)

.....

(ii) State the minimum colour depth required in image B.

(1)

.....

(iii) The number of colours used in each image is increased by one.

State the impact this will have on the file size of each image.

(2)

Image A .....

.....

Image B .....

.....

(iv) Give an expression to calculate the file size of an image in bytes.

(2)

.....

.....

.....

.....

(b) Sound can be sampled.

The length of a recording affects file size.

Give **two other** factors that affect file size.

(2)

1 .....

.....

2 .....

.....

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

(c) Binary, denary and hexadecimal can be used to represent data.

(i) Complete the table to show the result of the 8-bit binary addition.

(2)

0	1	1	1	0	0	1	0
0	1	1	1	0	1	1	1

(ii) Identify the shift used to divide a signed binary integer by two.

(1)

☒ **A** Arithmetic shift left one place

☒ **B** Arithmetic shift right one place

☒ **C** Logical shift left one place

☒ **D** Logical shift right one place

(iii) The hexadecimal value 48 represents the ASCII character H.

Give the ASCII character represented by the hexadecimal value 4D.

(1)

.....

.....

.....

(iv) Convert the 8-bit binary two's complement pattern 1111 0100 to denary.

(2)

.....

.....

.....

.....

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(d) A media production company produces and distributes films, magazines and video games.

The company uses data compression.

Discuss the use of lossy and lossless compression for different types of media.

Your answer should include:

- a definition of both lossy and lossless compression
- a suitable application for **each** type of compression
- the benefits **each** type of compression brings.

(6)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(Total for Question 4 = 20 marks)

5 Computers

(a) Operating systems provide user management features.

State **three** user management features that operating systems provide.

(3)

1 .....

.....

2 .....

.....

3 .....

.....

(b) Mobile phones use solid state storage.

Explain **one** benefit of using solid state storage for this application.

(2)

.....

.....

.....

.....

.....

.....

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(c) A clock is one component of a computer system.

Describe the purpose of the clock.

(2)

(d) Describe **one** method used by anti-malware software to identify malware.

(2)

(e) Robust software will cope with unexpected or incorrect input.

Describe **one** way that software can be designed to be robust.

(2)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

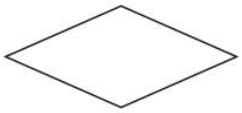
(f) An interpreter translates programs written in a high-level language.

Draw a flowchart in the box provided to show how an interpreter translates instructions and deals with syntax errors.

Here are some flowchart symbols:

Terminator 

Process 

Decision 

Input / Output 

You may not need to use all the flowchart symbols.

(6)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(Total for Question 5 = 17 marks)

TOTAL FOR PAPER = 75 MARKS

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

BLANK PAGE