



Cambridge International AS & A Level

CANDIDATE
NAMECENTRE
NUMBER

--	--	--	--	--

CANDIDATE
NUMBER

--	--	--	--

INFORMATION TECHNOLOGY

9626/32

Paper 3 Advanced Theory

October/November 2024

1 hour 45 minutes

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You may use an HB pencil for any diagrams, graphs or rough working.
- Calculators must **not** be used in this paper.

INFORMATION

- The total mark for this paper is 70.
- The number of marks for each question or part question is shown in brackets [].

This document has **12** pages. Any blank pages are indicated.



1 JavaScript uses `for` loops to run through a block of code.

(a) In JavaScript, the `for` loop has the following syntax:

```
for (Statement_1; Statement_2; Statement_3){  
  // block of code to be executed is written here  
}
```

Describe the purpose of each of the three statements:

Statement_1

.....

.....

.....

Statement_2

.....

.....

.....

Statement_3

.....

.....

.....

[3]

(b) Compare the use of a `for` loop with a `for in` loop.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

[3]





2 Describe how the following alterations can be made to parts of a bitmap image, using tools found in image editing software.

(a) removing the reflection from eyes in a digital image taken by flash photography

.....

.....

.....

.....

.....

.....

.....

..... [3]

(b) making the edges of objects in a digital photograph clearer

.....

.....

.....

.....

.....

.....

.....

..... [3]





3 A new software application has been evaluated for ease of use.

Describe **two** other evaluations that should be carried out on the new software application.

[6]

4 A project to create a new computer game has been divided into the tasks shown in the table.

Task number	Task	Follows on from task(s)	Expected duration (weeks)
1	Design the game		6
2	Code the game	1, 4	18
3	Test the game code	2	13
4	Create the user interface for the game	1	12
5	Release the game to the public	3, 7	6
6	Design the documentation for the game	1	6
7	Create the documentation for the game	6	20





- (a) Using the information in the table, draw a PERT (Performance Evaluation and Review Technique) chart for the project in the space below:

[5]

- (b) Describe the benefits of using a PERT chart.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

[3]



[8]

[8]



6 Using tunneling protocols in networking can affect the security of the data.

(a) Explain how tunneling protocols can increase data security.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

(b) Explain how tunneling protocols can decrease data security.

.....

.....

.....

.....

.....

.....

..... [2]





7 The data mining process consists of several phases.

Describe the tasks that occur in each of the following phases in the data mining process.

(a) data preparation

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

(b) evaluation

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN





Discuss the use of the parallel running method of implementation in this scenario.

[8]



9 (a) Explain how each of the following computer animation methods creates the illusion of movement.

(i) stop motion

.....

.....

.....

.....

.....

..... [2]

(ii) key frame

.....

.....

.....

.....

.....

.....

..... [3]

(b) Describe **one** property of an object that can be affected by altering its timings in an animated sequence.

.....

.....

..... [1]

DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN





..... [8]

[8]



BLANK PAGE

DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of Cambridge Assessment. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is a department of the University of Cambridge.

