



# AS COMPUTER SCIENCE

## Paper 1 Additional Questions

### IMPORTANT NOTES

These questions focus primarily on topics that were not covered by the AQA AS and A-level Computing specifications, introduced in 2009. It is hoped that teachers will find questions on these new topics to be particularly useful.

Many example questions on topics that are common to the new and old specifications can be found on past papers for COMP1, 2 and 3 on our website. Past papers that are more than three years old can be accessed via e-AQA.

This document contains additional questions; it is not intended to be treated as a complete paper.

The questions do not provide balance coverage of the specification or the assessment objectives in the same way that a fully live paper would do.

Please refer to the skeleton program specimen assessment materials when answering these questions.

Version 1.0

8/4/15

Answer **all** questions in the Electronic Answer Document.

0 1

In each question part below two statements are given followed by two conclusions numbered 1 and 2.

You must take the two given statements to be true.

Read the statements and then decide which combination of the given conclusions logically follows from the two given statements.

0 1

. 1

Statements: All computing students drink coffee.  
No coffee drinkers fly kites.

Conclusion 1: A computing student flies a kite.  
Conclusion 2: All kite fliers drink tea.

Give answer: A If only Conclusion 1 follows  
B If only Conclusion 2 follows  
C If either Conclusion 1 or Conclusion 2 follows  
D If neither Conclusion 1 nor Conclusion 2 follows  
E If both Conclusion 1 and Conclusion 2 follow.

[1 mark]

0 1

. 2

Statements: If it rains, the streets will be wet.  
If the streets are wet, accidents will happen.

Conclusion 1: Accidents will happen when it rains.  
Conclusion 2: The streets will never be dry.

Give answer: A If only Conclusion 1 follows  
B If only Conclusion 2 follows  
C If either Conclusion 1 or Conclusion 2 follows  
D If neither Conclusion 1 nor Conclusion 2 follows  
E If both Conclusion 1 and Conclusion 2 follow.

[1 mark]

0 2

A pseudo code representation of an algorithm is given in **Figure 1**.

**Figure 1**

```
A = 100
B = 60
WHILE B <> 0
    TEMP = B
    B = A MOD B
    A = TEMP
ENDWHILE
OUTPUT "The value is:", A
```

The MOD operator calculates the remainder resulting from an integer division. For example, 12 MOD 5 = 2.

**0 2 . 1** Dry run the above segment of code by completing **Table 1**.

Copy your answer in **Table 1** into the Electronic Answer Document.

**Table 1**

A	B	TEMP	OUTPUT
100	60	60	

[3 marks]

**0 2 . 2** What does the above segment of code in **Figure 1** perform?

[1 mark]

0 3

A pseudo code representation of an algorithm is given in **Figure 2**.

**Figure 2**

```
OUTPUT "Enter value 1:"  
INPUT Value1  
OUTPUT "Enter value 2:"  
INPUT Value2  
IF Value1 < Value2 THEN  
    OUTPUT "Value 2 is larger"  
ELSE  
    OUTPUT "Value 1 is larger"  
ENDIF
```

0 3

1

It is found when testing an implementation of the pseudo code in **Figure 2** that with the inputs 007 and 06 it wrongly outputs that the second value is larger.

Explain why this might be the case.

[2 marks]

0 3

2

It is also found whilst testing that an implementation fails with the inputs 34 and 34, wrongly outputting that the first value is larger.

Write the corrected code necessary so that the implementation would work correctly with the inputs 34 and 34.

[2 marks]

## Section B

Enter your answers to **Section B** in your Electronic Answer Document.

You **must save** this document at regular intervals.

These questions refer to the **Preliminary Material** and require you to load the Skeleton Program, but do not require any additional programming.

Refer either to the Preliminary Material issued with this question paper or your electronic copy.

0 4 . 1

Complete **Table 2** below by copying a line of code of the correct type from the `SetUpGame` subroutine of the Skeleton Program.

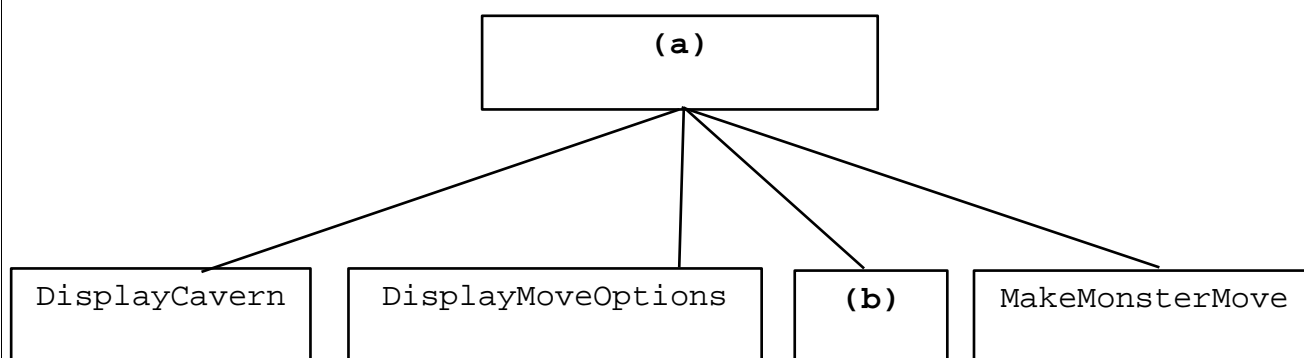
[3 marks]

**Table 2**

Type of statement	Line of code from Skeleton Program
assignment	
iteration	
selection	

**Figure 3** shows an incomplete hierarchy chart for part of the Skeleton Program.

**Figure 3**



0 4 . 2

What should be written in box (a) in **Figure 3**?

[1 mark]

0 4 . 3

What should be written in box (b) in **Figure 3**?

[1 mark]

05 . 1

Five stages of software development are represented in the columns of **Table 3**.

For each row in **Table 3**, shade **one** lozenge, in the appropriate column, to indicate in which stage the activity is most likely to occur.

Each stage of software development should only be used once in the table.

As an example, the first row has been completed for you, to indicate that writing the program code would be an activity that occurs in the implementation stage.

**[4 marks]**

**Table 3**

<b>Activity</b>	<b>Analysis</b>	<b>Design</b>	<b>Implementation</b>	<b>Testing</b>	<b>Evaluation</b>
writing the program code	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
using boundary data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
receiving end user feedback	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
identifying system objectives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
planning data structures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>