

6-A-Day – Computer Science GCSE (35)

Q1

Julie is writing a computer game that simulates a 100m race. Each time the space bar is pressed, the position of the player moves up by 1. When the position reaches 100, the player has won.

Here is Julie's algorithm for the program

```
CONST PlayerKey = " "  
Position = 0  
REPEAT  
  INPUT KeyPressed  
  If KeyPressed = PlayerKey THEN  
    Position = Position + 1  
  END IF  
UNTIL Position = 100
```

To make the game more interesting, Julie changes the rules. Each time the spacebar is pressed, the position of the player will now move up by a random number.

State **two** changes that need to be made to include this new rule. Justify each change.

Change 1

.....

Justification

.....

Change 2

.....

Justification

.....

[4]

Q2

State **one** advantage of compressing files before sending them over the internet.

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..... [1]

Q3

Describe the difference between off the shelf and custom written software.

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..... [2]

Q4	<p>Two types of compression are lossy and lossless.</p> <p>State which type of compression is most appropriate for each of the following and explain why it is appropriate.</p> <p>(i) Downloading the source code of a large program</p> <p>Type of compression</p> <p>Explanation</p> <p>.....</p> <p>.....</p> <p>..... [3]</p>
Q5	<p>(ii) Streaming a large video file</p> <p>Type of compression</p> <p>Explanation</p> <p>.....</p> <p>.....</p> <p>..... [3]</p>
Q6	<p>Describe the difference between proprietary and open source software.</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>..... [2]</p>