

Name: _____

Decomposition and Abstraction

Date:

Time:

Total marks available:

Total marks achieved: _____

G Wright

Questions

Q1.

Algorithms are used to store images, solve problems, encrypt and sort data, and to control devices.

Games software involves the use of algorithms and abstractions.

(i) A software game involves the use of two dice. An algorithm in this game is called 'roll'.

State the purpose of the algorithm 'roll'.

(1)

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.....

(ii) Give a reason why 'roll' is an abstraction.

(1)

.....
.....

(Total for question = 2 marks)

Q2.

Algorithms are used to store images, solve problems, encrypt and sort data, and to control devices.

State what is meant by the term 'abstracting'.

(2)

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.....

(Total for question = 2 marks)

Q1.

No Examiner's Report available for this question

Q2.

No Examiner's Report available for this question

Mark Scheme

Q1.

Question Number	Answer	Additional Guidance	Mark
(i)	A statement that includes: <ul style="list-style-type: none">• The purpose of 'roll' is to generate a single number, chosen randomly, between 1 and 12, inclusive (1) OR <ul style="list-style-type: none">• Two numbers between 1 and 6	<ul style="list-style-type: none">• Accept between 1 and 12• Do not award 'simulate a roll of dice' or equivalent.	(1)
Question Number	Answer	Additional Guidance	Mark
(ii)	One of the following reasons: <ul style="list-style-type: none">• 'Roll' is an abstraction because it allows the programmer to focus on the result of a roll, rather than on how to implement the roll algorithm (1) OR <ul style="list-style-type: none">• 'Roll' is an abstraction because it is a model/simulation/representation of a real/physical activity/action (1)		(1)

Q2.

Question Number	Answer	Additional Guidance	Mark
	A statement that includes: <ul style="list-style-type: none">• (Abstracting means) removing unnecessary detail/simplifying (1)• so that we can focus on the essence/real part/important part of the problem (1)		(2)