WJEC 2014 Online Exam Review

GCSE Computer Science Unit 1 4341-01

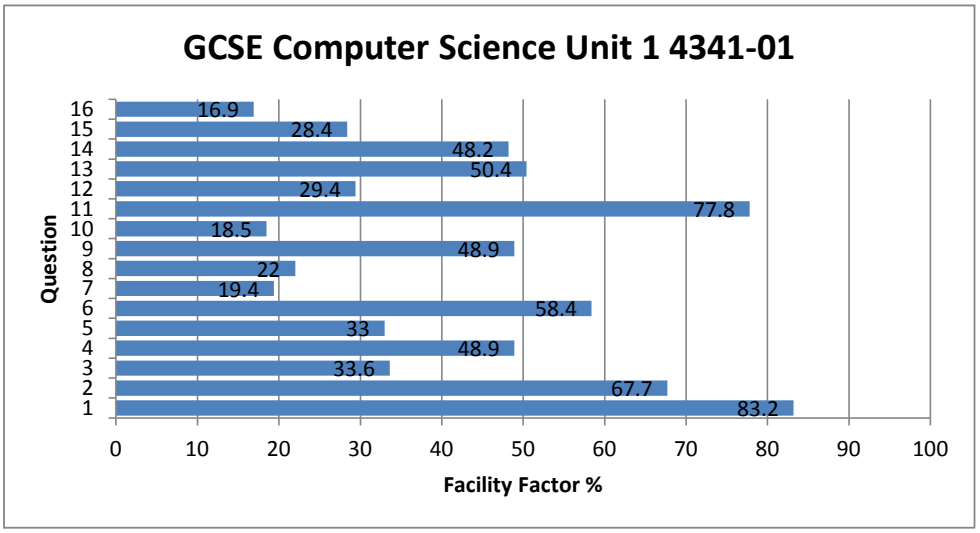
All Candidates' performance across questions

Question Title	N	Mean	S D	Max Mark	F F	Attempt %
1	364	3.3	0.8	4	83.2	99.7
2	365	4.1	1.4	6	67.7	100
3	363	2.7	1.8	8	33.6	99.5
4	361	3.4	1.8	7	48.9	98.9
5	359	2.6	1.6	8	33	98.4
6	334	2.3	1.5	4	58.4	91.5
7	326	0.8	0.8	4	19.4	89.3
8	314	1.1	1.1	5	22	86
9	355	2	1.2	4	48.9	97.3
10	357	1.1	1.4	6	18.5	97.8
11	363	5.4	1.8	7	77.8	99.5
12	327	0.6	0.7	2	29.4	89.6
13	344	1	0.8	2	50.4	94.3
14	357	3.9	2.7	8	48.2	97.8
15	345	0.9	0.9	3	28.4	94.5
16	336	2	1.8	12	16.9	92

4

10

14



Examiner only

4. There are many different types of network topology, of which *Bus* and *Star* are types.

(a) Draw a diagram of a Star topology network clearly labelling **all** important hardware. [3]

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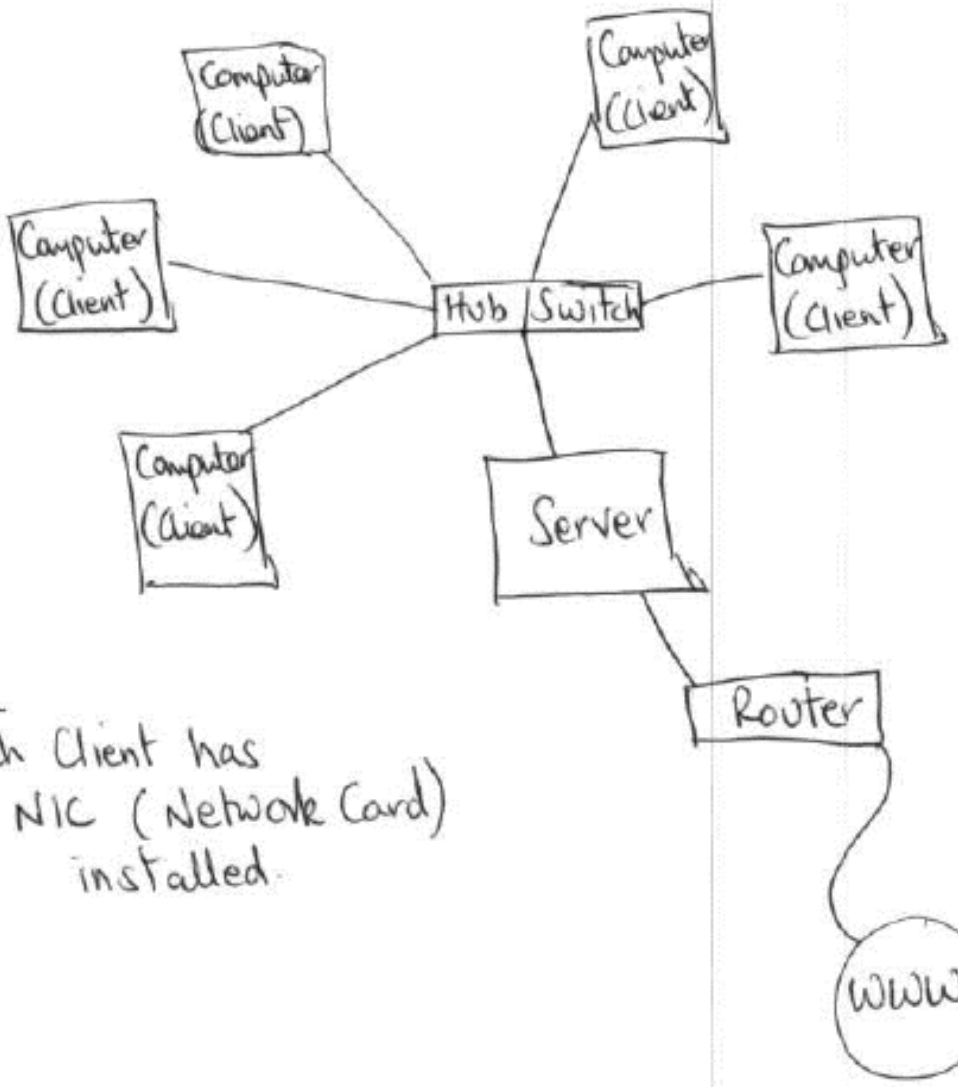

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Each Client has a NIC (Network Card) installed.

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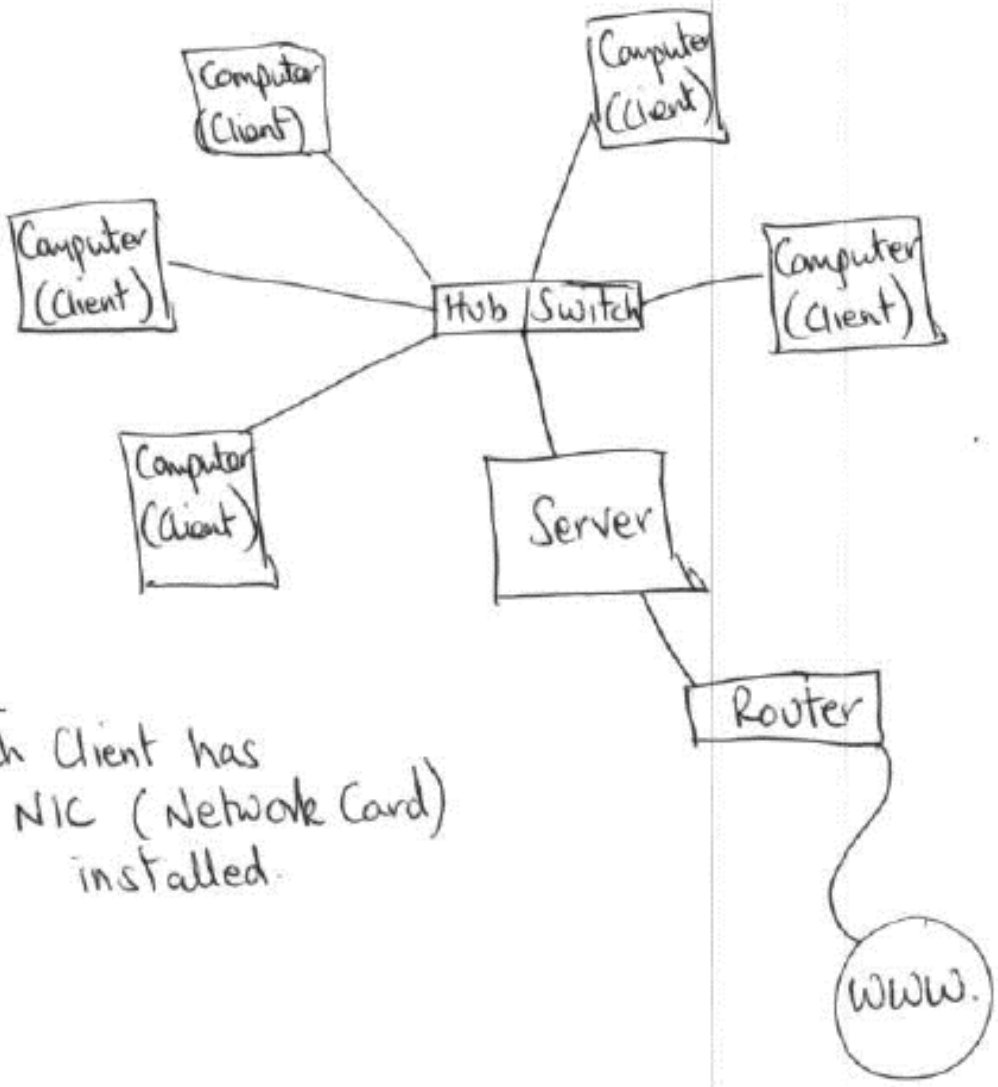

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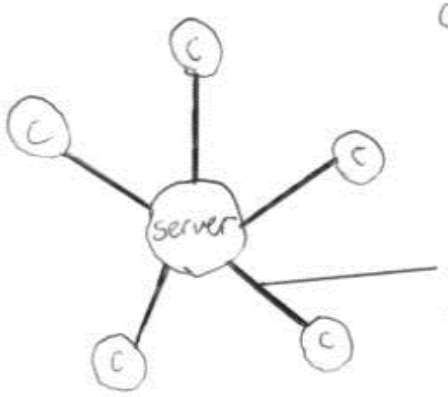

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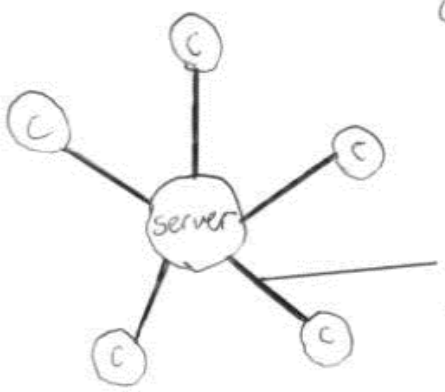

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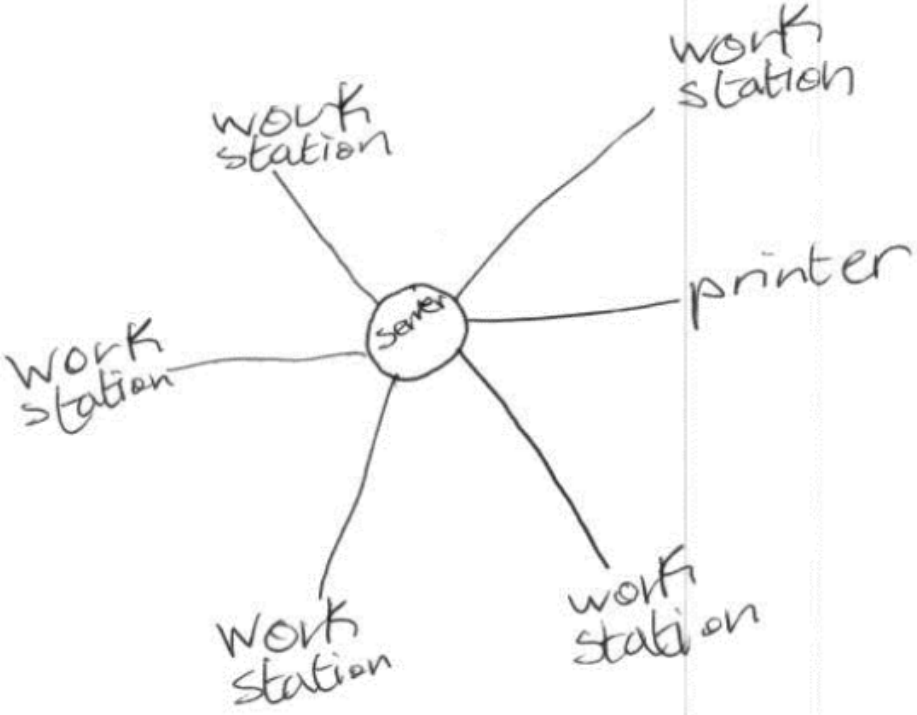

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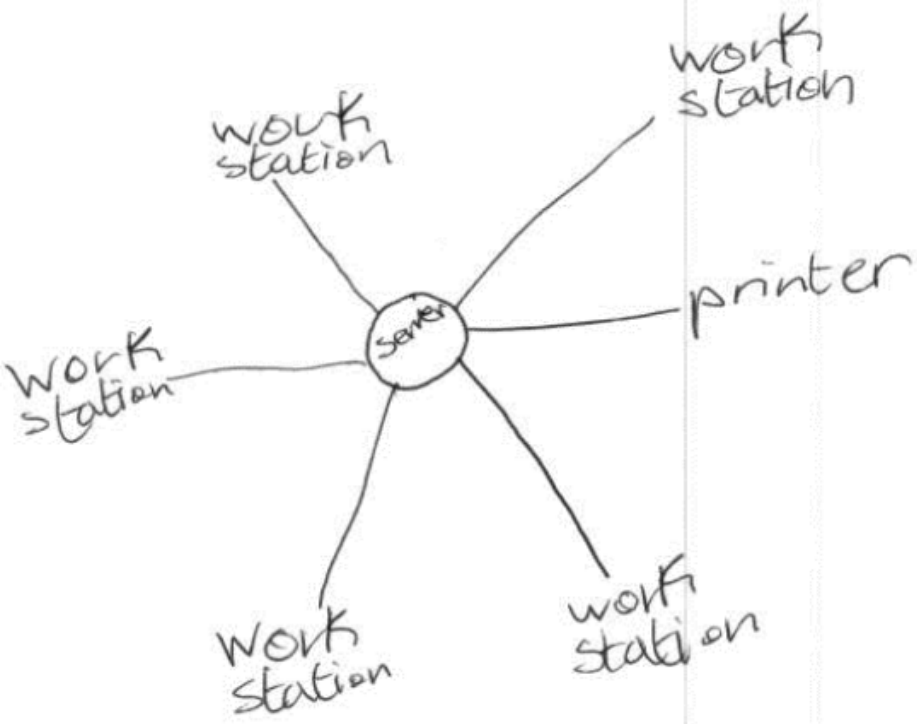

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(a) Giving an example, state what is meant by a *syntax error*. [2]

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The programming language does not recognise the function attatched to a line of code exactly due to a spelling error such as ind instead of int in Java which would not be recognised by an interpre

(b) Giving an example, state what is meant by a *run time error*. [2]

An error ~~caused by~~ revealed only during execution such as a logical operation in a loop which causes an endless loop which requests more memory that a computer can handle and crashes the system.

(c) Giving an example, state what is meant by a *logical error*. [2]

An error in logic which allows the program to run but still output the wrong value such as confusing a '+' character with a '-' character in a line of code causing a calculator to output 2+2 as 2-2 or 0.

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10. Computer programs can contain different types of *error*.

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Syntax is like the "grammar" of a programming language. So a Syntax error is when there is a grammatical rule broken in the code. An example might be print(Hello World). This should have speech marks around the text.

(b) Giving an example, state what is meant by a *run time error*. [2]

A run-time error is when a program cannot execute because for example, a variable referred to in 'Main' might not have been declared properly & so effectively doesn't exist.

(c) Giving an example, state what is meant by a *logical error*. [2]

A logical error is when a program does not return the expected result because of a problem to do with the logic. It could be that in the program a '>' symbol was used instead of a '<' symbol, thus turning the logical result upside down. For this reason, they can be quite difficult to find because the program still runs.

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10. Computer programs can contain different types of *error*.

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A syntax error is an error in the rules of the programming language, eg. spelling, characters. For example: in Python strings, when printed must have speech marks ⇒ print (Hello World error
and brackets.

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An error that occurs when the program loops continously without terminating.
eg. Count = 10
While Count > 5, Count = Count + 1
error

(c) Giving an example, state what is meant by a *logical error*. [2]

This is an error in the logic of the program which would not prevent the program running but would not allow it to run properly.
For example: If 2 > 10 error
2 is never greater than 10 so this program won't work but the compiler would not detect why.

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Examiner only

14. *(a)* Convert the hexadecimal number **3C** to binary. [2]

(b) Convert the hexadecimal number **3C** to denary. [2]

(c) Convert the binary number **11110111** to hexadecimal. [2]

(d) Explain why hexadecimal numbers are often used to represent binary numbers. [2]

14. *(a)* Convert the hexadecimal number **3C** to binary. [2]

3C = 3 · 12

3 = 0011

12 = 1100

3C = 00111100

(b) Convert the hexadecimal number **3C** to denary. [2]

3C = ~~00111100~~ 00111100

00111100 = 32 + 16 + 8 + 4

= 60

(c) Convert the binary number **11110111** to hexadecimal. [2]

1111 0111 1111 0111 = E7

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(b) Convert the hexadecimal number **3C** to denary. [2]

3 x 16 = 48

48 + 12 = 60

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(c) Convert the binary number **11110111** to hexadecimal. [2]

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(d) Explain why hexadecimal numbers are often used to represent binary numbers. [2]

Because they are a short way of representing a byte of data. Also humans can understand it better than pure binary.

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