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## Mark Scheme (Results)

October 2020

Pearson Edexcel International

Award in Lower Secondary Computing

LCP11 paper 01

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October 2020

Publications Code LCP11\_01\_2010\_MS

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## General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

## Section A

Question number	Answer	Mark
1	The only correct answer is B  <i>A is not correct because it is not what WAN stands for</i> <i>C is not correct because it is not what WAN stands for</i> <i>D is not correct because it is not what WAN stands for</i>	(1)

Question number	Answer	Mark
2a	Inter-connected networks / A network of networks Accept: A system of connected computers around the world Accept: A Wide Area Network (WAN)	(1)

Question number	Answer	Mark
2b	The only correct answer is D  <i>A is not correct because data is not prepared for transmission across a network by being converted to ASCII</i> <i>B is not correct because data is not prepared for transmission across a network by being added to a byte</i> <i>C is not correct because data is not prepared for transmission across a network by being output to a device</i>	(1)

Question number	Answer	Mark
2c	The only correct answer is D  <i>A is not correct because a URL is not a language used to create a web page</i> <i>B is not correct because a URL is not a protocol for transferring data</i> <i>C is not correct because a URL is not a search engine</i>	(1)

Question number	Answer	Mark
2d	Award one mark up to a maximum of two marks for each: <ul style="list-style-type: none"> <li>• Cost</li> <li>• Remoteness / Rural location/ Lack of infrastructure</li> <li>• Politics</li> <li>• Culture / religion</li> </ul> Do not accept: responses relating to devices / lack of connectivity in the home	(2)

Question number	Answer	Mark
3	<ul style="list-style-type: none"> <li>• Instructions</li> <li>• Programs</li> <li>• Code</li> </ul>	(1)

Question number	Answer	Mark
4	<p>The only correct answer is C</p> <p><i>A is not correct because communication protocols do not provide an interface between the computer and the user</i></p> <p><i>B is not correct because a data structure does not provide an interface between the computer and the user</i></p> <p><i>D is not correct because optical discs do not provide an interface between the computer and the user</i></p>	(1)

Question number	Answer	Mark
5a	<ul style="list-style-type: none"> <li>• Less than</li> <li>• Equivalent / Equal to / Equality</li> </ul>	(2)

Question number	Answer	Mark
5b	<p>The only correct answer is D</p> <p><i>A is not correct because they are not arithmetic operators</i></p> <p><i>B is not correct because they are not Boolean operators</i></p> <p><i>C is not correct because they are not logical operators</i></p>	(1)

Question number	Answer	Mark
6	<p>The only correct answer is B</p> <p><i>A is not correct because an efficient algorithm does not create fewer variables</i></p> <p><i>C is not correct because an efficient algorithm would take less time to complete</i></p> <p><i>D is not correct because an efficient algorithm would use less storage</i></p>	(1)

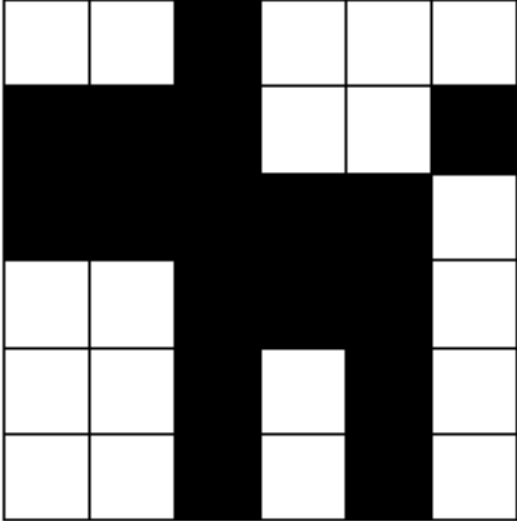
Question number	Answer	Mark
7	<ul style="list-style-type: none"> <li>• Satellite</li> <li>• Cable</li> </ul> <p>Allow: Internet</p> <p>Do not allow: Cables (with an 's')</p>	(1)

Question number	Answer	Mark
8	source	(1)

Question number	Answer	Mark
9	<p>Award 1 mark for each correct line, up to a maximum of 3 marks.</p> <p><b>Utility software</b></p> <p><b>Purpose</b></p> <p>Do NOT award answers with more than one line to and from any of the boxes.</p>	(3)

Question number	Answer	Mark
10a	<p>The only correct answer is C</p> <p><i>A is not correct because there are 8 bits in a byte</i>  <i>B is not correct because there are 8 bits in a byte</i>  <i>D is not correct because there are 8 bits in a byte</i></p>	(1)

Question number	Answer	Mark
10b	<p>Award one mark for each correct nibble in the correct position:  0101 0111</p> <p>First zero is required for MSB.  Ignore additional leading zeros.  Ignore base notation.</p>	(2)

Question number	Answer	Mark
10c	<p>Award one mark for each correct pair of rows.            (1 mark for row 1 and 2)            (1 mark for row 3 and 4)            (1 mark for row 5 and 6)</p> 	(3)
	Allow: Images rotated 180°	

Question number	Answer	Mark
11	<p>Award one mark for any from:</p> <ul style="list-style-type: none"> <li>• Communication</li> <li>• Collaboration</li> <li>• Sharing devices/software/resources</li> <li>• File sharing</li> <li>• Remote access</li> <li>• Roaming profiles</li> <li>• Centralised storage</li> <li>• Access to the Internet</li> </ul>	(1)

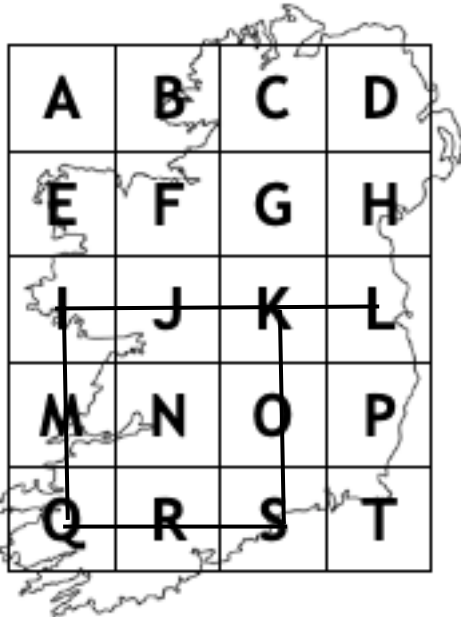
Question number	Answer	Mark
12	Convert (the integer) 33 to a string	(1)

Question number	Answer	Mark
13a	<p>The only correct answer is B</p> <p><i>A is not correct because an integer is not a data structure</i>  <i>C is not correct because logic is not a data structure</i>  <i>D is not correct because a variable is not a data structure</i></p>	(1)

Question number	Answer	Mark
13b	4	(1)

Question number	Answer	Mark
13c	10	(1)

Question number	Answer	Mark
14	<p>The only correct answer is B</p> <p><i>A is not correct because the most comparisons would be needed if the target value was in the last position</i></p> <p><i>C is not correct because the most comparisons would be needed if the target value was in the last position</i></p> <p><i>D is not correct because the most comparisons would be needed if the target value was in the last position</i></p>	(1)

Question number	Answer	Mark
15	<p>Award 1 mark for line going from L to I</p> <p>Award 1 mark for line going from I to Q</p> <p>Award 1 mark for fully correct path (see path on image)</p> 	(3)



Question number	Answer	Mark
16a	<ul style="list-style-type: none"> <li>• Stores longer recordings</li> <li>• Greater storage capacity</li> <li>• Cheaper</li> </ul>	(1)

Question number	Answer	Mark
16b	Magnetic	(1)

Question number	Answer	Mark
16c	<p>Award 1 mark for each of the following:</p> <p>A <b>sample</b> of the <b>amplitude</b> of a sound is measured thousands of times every <b>second</b>.</p>	(3)

Question number	Answer	Mark
16d	<p>Award 1 mark for identification and 1 mark for the linked reason, up to a maximum of 2 marks.</p> <p><b>Identification:</b> More accurate representation (of the amplitude)</p> <p><b>Linked reason:</b> Because more values can be used (to represent the amplitude)</p> <p>Example response More data available to represent each sample (1) so better recreation of the original sound (1)</p> <p>Accept for linked reason: Increases the number of bits <b>in each sample</b>. But do not accept: Increases the number of bits (on its own).</p>	(2)

Question number	Answer	Mark
17	<p>A description to include three linked points from:</p> <p>Starting with the first pair (1), comparisons are made between adjacent pairs (1). If items are not in order they are swapped (1). This continues until all items have been compared. (1)</p> <p>Example Bubble sort starts with the first value and compares it with the value next to it. The values are swapped if necessary. The process is repeated until all values have been compared.</p>	(3)

Question number	Answer	Mark
18a	You need a Child ticket	(1)

Question number	Answer	Mark
18b	<ul style="list-style-type: none"> <li>• Logic</li> <li>• Logical</li> </ul>	(1)

Question number	Answer	Mark
19	<p>Award 1 mark for any one of the following up to a maximum of two:</p> <ul style="list-style-type: none"> <li>• Reduce use of toxic materials / use eco-friendly materials</li> <li>• Reuse (e.g. give to a friend / school etc) / Sell</li> <li>• Recycle</li> <li>• Repair rather than replace</li> <li>• Reduce carbon footprint (by not shipping waste to other countries)</li> <li>• Dispose at specialist e-waste sites / Extract precious/non-renewable materials</li> <li>• Encourage manufacturers to support older models for longer / Encourage owners not to upgrade all the time / Encourage owners to use their phone for longer.</li> </ul>	(2)

Question number	Answer	Mark
20	<pre>storedPassword = "b3ArJ1mm" userPass = input("Enter the password: ") while userPass != storedPassword:     userPass = input("Enter password: ") print("Welcome")</pre> <p>Accept &lt;&gt; for !=</p>	(4)

## Section B

Question number	Answer	Mark
21ai	<ul style="list-style-type: none"><li>• Italic/Important</li><li>• Bold</li></ul>	(1)

Question number	Answer	Mark
21aii	Award one mark for each up to a maximum of two marks. <ul style="list-style-type: none"><li>• Bold/Strong</li><li>• Underline</li><li>• Colour</li><li>• Highlight</li><li>• Shading</li></ul>	(2)

Question number	Answer	Mark
21b	<ul style="list-style-type: none"><li>• Consistency</li><li>• To maintain corporate identity</li></ul>	(1)

Question number	Answer	Mark
21c	Removes part of the image	(1)

Question number	Answer	Mark
22a	Award one mark for each up to a maximum of two marks. <ul style="list-style-type: none"><li>• Primary</li><li>• Foreign</li><li>• Compound</li><li>• Composite</li><li>• Candidate</li></ul>	(2)

Question number	Answer	Mark
22b	The only correct answer is D  <i>A is not correct because a relational database uses linked tables</i> <i>B is not correct because a relational database uses linked tables</i> <i>C is not correct because a relational database uses linked tables</i>	(1)

Question number	Answer	Mark
22c	The only correct answer is A  <i>B is not correct because Equals is not a logical operator</i> <i>C is not correct because &gt; is not a logical operator</i> <i>D is not correct because = is not a logical operator</i>	(1)

Question number	Answer	Mark
23	The only correct answer is A  <i>B is not correct because a Memo should be used to create a short message to an employee</i> <i>C is not correct because a Memo should be used to create a short message to an employee</i> <i>D is not correct because a Memo should be used to create a short message to an employee</i>	(1)

Question number	Answer	Mark
24	<ul style="list-style-type: none"> <li>• Graphics</li> <li>• Image editor</li> <li>• Image manipulation</li> </ul>	(1)

Question number	Answer	Mark
25	<ul style="list-style-type: none"> <li>• Link/hyperlink</li> <li>• Button</li> <li>• Macro</li> </ul>	(1)

Question number	Answer	Mark
26a	Award 1 mark for MIN and 1 mark for D2:D4  =MIN(D2:D4)  Award 1 mark max if MIN or D2:D4 are given in the wrong place.	(2)

Question number	Answer	Mark
26b	9	(1)

Question number	Answer	Mark
26c	=C2*D2 =D2*C2  Accept absolute referencing ('\$' before any character or number) Accept: =SUM(C2*D2) Accept: =PRODUCT(C2*D2)	(1)

Question number	Answer	Mark
26d	<ul style="list-style-type: none"> <li>• Time</li> <li>• Date</li> <li>• Date/Time</li> <li>• Time and Date</li> <li>• Date and Time</li> <li>• hh:mm:ss</li> <li>• hour:minute:second</li> </ul>	(1)

Question number	Answer	Mark
26e	<ul style="list-style-type: none"> <li>• To make it easier/quicker to <b>search/find items</b></li> <li>• To make it easier/quicker to <b>analyse/understand/find patterns</b></li> </ul>	(1)

Question number	Answer	Mark
27	<ul style="list-style-type: none"> <li>• Sending takes less time</li> <li>• Costs less</li> <li>• Uses less of her data allowance</li> <li>• Uses less bandwidth</li> <li>• Stays under attachment size limit</li> </ul>	(1)

Question number	Answer	Mark
28	The only correct answer is D <i>A is not correct because a slide with the text would require too much reading</i> <i>B is not correct because a slide with a military band is not relevant</i> <i>C is not correct because a thumbs-up emoji is not relevant</i>	(1)

Question number	Answer	Mark
29	A linked response to include three from: <ul style="list-style-type: none"> <li>• Vectors are drawn from mathematical coordinates</li> <li>• Because coordinates can be recalculated</li> <li>• To allow images to be resized</li> <li>• And be used on different products/applications</li> <li>• So that clarity can be retained / doesn't pixelate</li> </ul>	(3)

Question number	Answer	Mark
30	<ul style="list-style-type: none"> <li>• Access from anywhere / any device</li> <li>• Collaboration</li> <li>• Sharing files</li> <li>• Data is backed up / not lost if device damaged/lost/stolen</li> <li>• Less use of local storage</li> <li>• Provides more storage</li> <li>• Cheaper</li> </ul>	(1)

Question number	Answer	Mark
31	<p>A description to include two linked points such as:</p> <ul style="list-style-type: none"> <li>• Target content can be marked up as being anchors (1) to which other content can be linked (1)</li> <li>• Anchors are targets (1) to which other content can be (hyper)linked (1)</li> <li>• It is a specific part/component of a webpage (1) to which a user can be taken when they click on a link (1)</li> </ul> <p>Accept 'anchor' as reference to a hyperlink, as reference to the &lt;a&gt; tag is inferred, e.g. "When an anchor is clicked (1) the user is taken to the corresponding area of the webpage (1)"</p> <p>Accept reference to linking between web pages / websites.</p>	(2)

Question number	Answer	Mark
32	<p>Scatter (graph)</p> <p>Accept:</p> <ul style="list-style-type: none"> <li>• column/line combo</li> <li>• two line graphs</li> <li>• two column graphs</li> <li>• two bar graphs</li> </ul>	(1)

Question number	Answer	Mark
33a	<p>The only correct answer is A</p> <p><i>B is not correct because a photograph Kate takes is a primary source.</i></p> <p><i>C is not correct because Kate's responses to a questionnaire would be a primary source</i></p> <p><i>D is not correct because responses to interview questions that Kate asks would be a primary source.</i></p>	(1)

Question number	Answer	Mark
<b>33b</b>	<p>Award 1 mark for identification and 1 mark for a linked reason, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"><li>• This avoids (personal) bias / provides more opinions/ideas (1) because secondary sources are created by others (1)</li><li>• Comparisons can be made (against primary data) (1) so it increases reliability (1)</li></ul> <p>Allow other reasonable responses such as: "It enables you to gather data that it would not otherwise be possible to gather from primary sources (1) to improve validity (1)"</p> <p>Accept 'accuracy' or 'trustworthiness' for 'reliability'. 'Created by others' can be articulated as 'other sources'.</p>	<b>(2)</b>

