

Mark Scheme  
(Results)

Summer 2012

PLSC Lower Secondary (Year 9)

LSC01 Paper 01

## **Edexcel and BTEC Qualifications**

Edexcel and BTEC qualifications come from Pearson, the world's leading learning company. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information, please visit our website at [www.edexcel.com](http://www.edexcel.com)

Our website subject pages hold useful resources, support material and live feeds from our subject advisors giving you access to a portal of information. If you have any subject specific questions about this specification that require the help of a subject specialist, you may find our Ask The Expert email service helpful.

[www.edexcel.com/contactus](http://www.edexcel.com/contactus)

## **Pearson: helping people progress, everywhere**

Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: [www.pearson.com/uk](http://www.pearson.com/uk)

Summer 2012

Publications Code PL032813

All the material in this publication is copyright

© Pearson Education Ltd 2012

## 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.
- Mark schemes will indicate within the table where, and which strands of QWC, are being assessed. Questions labelled with an **asterix (\*)** are ones where the quality of your written communication will be assessed.

## Using the Mark Scheme

Examiners should look for qualities to reward rather than faults to penalise. This does NOT mean giving credit for incorrect or inadequate answers, but it does mean allowing candidates to be rewarded for answers showing correct application of principles and knowledge. Examiners should therefore read carefully and consider every response: even if it is not what is expected it may be worthy of credit.

The mark scheme gives examiners:

- an idea of the types of response expected
- how individual marks are to be awarded
- the total mark for each question
- examples of responses that should NOT receive credit.

/ means that the responses are alternatives and either answer should receive full credit.

( ) means that a phrase/word is not essential for the award of the mark, but helps the examiner to get the sense of the expected answer.

Phrases/words in **bold** indicate that the meaning of the phrase or the actual word is **essential** to the answer.


ecf/TE/cq (error carried forward) means that a wrong answer given in an earlier part of a question is used correctly in answer to a later part of the same question.

Candidates must make their meaning clear to the examiner to gain the mark. Make sure that the answer makes sense. Do not give credit for correct words/phrases which are put together in a meaningless manner. Answers must be in the correct context.

Question Number	Answer	Mark
<b>1</b>	C	<b>1</b>
<b>2</b>	A	<b>1</b>
<b>3</b>	B	<b>1</b>
<b>4</b>	C	<b>1</b>
<b>5</b>	B	<b>1</b>
<b>6</b>	B	<b>1</b>
<b>7</b>	A	<b>1</b>
<b>8</b>	B	<b>1</b>
<b>9</b>	B	<b>1</b>
<b>10</b>	D	<b>1</b>
<b>Total for question</b>		

Question Number	Acceptable answers	Additional guidance	Mark
<b>11(a)</b>	Nucleus	[do not accept chromosomes, genes, any genetic material]	<b>1</b>
<b>11(b)</b>	(Cell) membrane	[do not accept cell wall]	<b>1</b>
<b>11(c)</b>	Cytoplasm	Accept protoplasm	<b>1</b>
		<b>Total for question</b>	<b>3</b>

Question Number	Acceptable answers	Additional guidance	Mark
<b>12(a)</b>	2	One correct 1 mark	<b>1</b>
<b>12(b)</b>	4		<b>1</b>
<b>12(c)</b>	1	Two or three correct 2 marks	<b>1</b>
<b>12(d)</b>	3		<b>1</b>
		All correct = 3 marks	
		<b>Total for question</b>	<b>3</b>

Question Number	Acceptable Answers	Additional guidance	Mark
<b>13(a)</b>	<b>Energy</b> transfer/flow/ direction/pathway	Answers must refer to energy	<b>1</b>
<b>13(b)</b>	Producer = cabbage or grass or maize (1)  Secondary consumer = hawk or fox (1)		<b>2</b>
<b>13(c)</b>	4 (food chains)		<b>1</b>
<b>13(d)</b>	Sketch of correct pyramid/rectangles (1)  Labelling of all three organisms (1)  	Blocks need to decrease in size bottom to top for one mark  Pyramid or rectangular blocks upside down <b>AND</b> largest shape is labelled "grass", second largest is labelled "rabbit" and smallest shape is labelled "hawk" scores (1)	<b>2</b>
		<b>Total for question</b>	<b>6</b>

Question Number	Answer	Mark
<b>14</b>	B	<b>1</b>
<b>15</b>	B	<b>1</b>
<b>16</b>	B	<b>1</b>
<b>17</b>	B	<b>1</b>
<b>18</b>	C	<b>1</b>
<b>19</b>	C	<b>1</b>
<b>20</b>	A	<b>1</b>
<b>21</b>	A	<b>1</b>
<b>22</b>	C	<b>1</b>
<b>23</b>	C	<b>1</b>
	<b>Total for question</b>	<b>10</b>

Question Number	Acceptable answers	Additional guidance	Mark
<b>24</b>	<p><b>Any three</b></p> <p>Oxygen is required for burning (1)</p> <p>(When match burns) the oxygen inside glass is used up (1)</p> <p>So there is less gas in the glass (1)</p> <p>Decrease in/less pressure inside glass (1)</p> <p>So there is greater pressure from gas in the balloon than from gas in the glass (so glass sticks to the balloon) (1)</p>	Ignore hot air rises	<b>3</b>
		<b>Total for question</b>	<b>3</b>

Question	Acceptable Answers	Additional guidance	Mark
<b>25(a)</b>	R		<b>1</b>
<b>25(b)</b>	S		<b>1</b>
<b>25(c)</b>	Q		<b>1</b>
		<b>Total for question</b>	<b>3</b>

Question	Acceptable Answers	Additional guidance	Mark
<b>26(a)</b>	<p>Suitable scale (1)</p> <p>All points correctly plotted (2)</p> <p>Line/curve of best fit using all five points (1)</p>	<p>Must use at least half the grid and linear scales but solubility does not need to start at zero</p> <p>(error to one small square) minus 1 mark each error</p>	<b>4</b>
<b>26(b)</b>	<p>Correctly calculated from their graph (1)</p> <p>g or g/100cm<sup>3</sup> (1)</p>		<b>2</b>
		<b>Total for question</b>	<b>6</b>

Question Number	Answer	Mark
<b>27</b>	A	<b>1</b>
<b>28</b>	B	<b>1</b>
<b>29</b>	B	<b>1</b>
<b>30</b>	C	<b>1</b>
<b>31</b>	C	<b>1</b>
<b>32</b>	D	<b>1</b>
<b>33</b>	A	<b>1</b>
<b>34</b>	A	<b>1</b>
<b>35</b>	C	<b>1</b>
<b>36</b>	C	<b>1</b>
<b>Total for question</b>		<b>10</b>

Question Number	Acceptable Answers	Additional guidance	Mark
<b>37</b>	Force = 500 (N) <b>(1)</b>		<b>2</b>
	Pressure = 25 (N/cm <sup>2</sup> ) <b>(1)</b>		
<b>Total for question</b>			<b>2</b>

Question Number	Acceptable Answers	Additional guidance	Mark
<b>38</b>	All colours named (ROYGBIV) <b>(2)</b>	5 or 6 colours = 1 mark 7 colour = 2 marks  For third and fourth marks allow ECF from the colours given. E.g. Red Orange Yellow Green Blue Indigo Purple from top to bottom would score (1) + (1) + (1)  Stand alone mark	<b>4</b>
	All 7 in the correct order <b>(1)</b>		
	Red at top, violet at bottom <b>(1)</b>		
<b>Total for question</b>			<b>4</b>

**Total for Section A = 60 marks**



## Section B

Question Number	Acceptable Answers	Additional guidance	Mark
<b>39(a)</b>	Mass of seeds (1) variety of seeds (1)		<b>2</b>
<b>39(b)</b>	Idea of a fair test /controlled variable / all other factors being the same	Accept to make valid comparisons idea Ignore reference to accuracy	<b>1</b>
<b>39(c)(i)</b>	22 (°C )		<b>1</b>
<b>39(c)(ii)</b>	(31 – their answer to (c)(i)) (1) 9 (1)	Answer 9 only equals 2 marks	<b>2</b>
<b>39(d)</b>	Live/germinating/growing seeds release [heat] energy (1)  Temperature of flask B > flask A idea (1)  Live/germinating/growing seeds respire (1)	Accept dead seeds don't release energy (1) because Temperature of flask A has not changed (1)	<b>2</b>
<b>Total for question</b>			<b>8</b>

Question Number	Acceptable Answers	Additional guidance	Mark
<b>40 (a)(i)</b>	Sulfuric acid is corrosive/toxic/irritant	Accept reference to damage to clothing/causes burns/harms skin  Ignore references to danger	<b>1</b>
<b>40 (a)(ii)</b>	Wear goggles/wear gloves/wear lab coat/keep containers closed/use small quantities/use low concentrations/use dilute solutions	Accept wear apron Safety precaution should be linked to the hazard	<b>1</b>
<b>40(b)</b>	(Rakhi) (adding small amounts of Mg) controls rate of reaction/ensures reaction is not too fast /prevents solution getting too hot <b>(1)</b>  (Sunil) ensures reaction is complete/all acid used up/all acid reacted / all acid neutralised <b>(1)</b>	Accept reduces risk of acid vapour/splashes Accept so the reaction is slow(er)	<b>2</b>
<b>40(c)</b>	Filter (liquid to remove excess magnesium ribbon) <b>(1)</b>  Evaporate water (to form crystals) <b>(1)</b>	Accept centrifuge/decant/sieve  Ignore strain  Accept place solution in a warm place/leave for a few days/heat to remove water	<b>2</b>
		<b>Total for question</b>	<b>6</b>

Question Number	Acceptable Answers	Additional guidance	Mark
<b>41(a)(i)</b>	24 (°C)		<b>1</b>
<b>41(a)(ii)</b>	61 circled <b>OR</b> 63 circled in column three	If circle both 63, 61 give mark	<b>1</b>
<b>41(b)</b>	<p><b>Second mark consequential on first mark</b></p> <p><b>First mark</b> Heat lost from surface greatest <b>(1)</b></p> <p><b>Second mark</b> Any one from:</p> <p>Temperature fell further/quickest in the wide mug <b>(1)</b></p> <p><b>OR</b></p> <p>Wide/thick mug lost heat quicker <b>(1)</b></p> <p><b>OR</b></p> <p>Wide/thicker mug has a bigger surface area <b>(1)</b></p>	<p>Accept 'from surface greatest'</p> <p>Accept 'temperature fell less in narrow mug'</p> <p>Accept wider mug has cooled more (in same time)</p>	<b>2</b>
<b>41(c)</b>	Put lid on <b>(1)</b>  Insulate/lag/cover/wrap the sides <b>(1)</b>		<b>2</b>
		<b>Total for question</b>	<b>6</b>

**Total for Section B = 20 marks**

Further copies of this publication are available from  
Edexcel Publications, Adamsway, Mansfield, Notts, NG18 4FN

Telephone 01623 467467

Fax 01623 450481

Email [publication.orders@edexcel.com](mailto:publication.orders@edexcel.com)

Order Code PL032813 Summer 2012

For more information on Edexcel qualifications, please visit our website  
[www.edexcel.com](http://www.edexcel.com)

Pearson Education Limited. Registered company number 872828  
with its registered office at Edinburgh Gate, Harlow, Essex CM20 2JE

Ofqual



Llywodraeth Cynulliad Cymru  
Welsh Assembly Government

