ISEB
Independent Schools Examinations Board

COMMON ENTRANCE EXAMINATION AT 13+

SCIENCE

LEVEL 1

MARK SCHEME

Specimen Paper Mark Scheme

(for first examination in Autumn 2017)

This is a suggested, not a prescriptive, mark scheme.

28315SM39

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Q.	Answer	Mark	Additional Guidance
1. (a)	the Sun	**10**	
(b)	a producer and one or more consumers		
(c)	**C**		
(d)	a fuse		
(e)	**A** has a higher frequency than **B**		
(f)	$CuSO_4$		
(g)	solute		
(h)	discontinuous variation		
(i)	renewable resource		
(j)	carbon		
2. (a) (i)	points correctly plotted	**4**	$\frac{1}{2}$ mark for each point
(ii)	curve of best fit	**1**	
(b) (i)	25 °C	**1**	accept answers 23–27 °C
(ii)	rises slowly	**2**	
(iii)	rises rapidly	**2**	
(c)	saturated	**1**	
3. (a) (i)	it creates an increased surface area	**1**	accept valid alternatives
(ii)	to facilitate diffusion of gases	**1**	
(iii)	to carry gases to and from lungs	**1**	
(b)	the heart	**1**	
(c)	airways narrow/become blocked, reducing airflow to the lungs	**2**	or words to this effect
(d)	widens airways, it enlarges the airflow to the lungs	**2**	or words to this effect
(e)	tar covers lung walls/airways and there is less surface area for gas exchange	**2**	accept valid alternatives

<table>
<tr><th>Q.</th><th>Answer</th><th>Mark</th><th>Additional Guidance</th></tr>
<tr><td>4. (a) (i)

(ii)</td><td>different colours easily distinguish acid and alkaline solutions

can be difficult to identify the difference in the colours pink and purple</td><td>2

2</td><td></td></tr>
<tr><td>(b)</td><td>red onion water, turmeric water, red litmus</td><td>3</td><td></td></tr>
<tr><td>(c)</td><td>both blue and pink litmus paper show no colour change in a neutral solution</td><td>2</td><td></td></tr>
<tr><td>(d)</td><td><table><tr><th>pH</th><th>acid, neutral or alkaline?</th></tr><tr><td>less than 7</td><td>acid</td></tr><tr><td>7</td><td>neutral</td></tr><tr><td>more than 7</td><td>alkaline</td></tr></table></td><td>1</td><td></td></tr>
<tr><td>5. (a)</td><td>suitable questions in boxes requiring yes/no answer</td><td>3</td><td></td></tr>
<tr><td>(b)</td><td>answer depending on questions in part (a)</td><td>2</td><td></td></tr>
<tr><td>(c) (i)

(ii)</td><td>each vertebrate group has a different skin-covering

skin-covering is a diagnostic feature in vertebrates

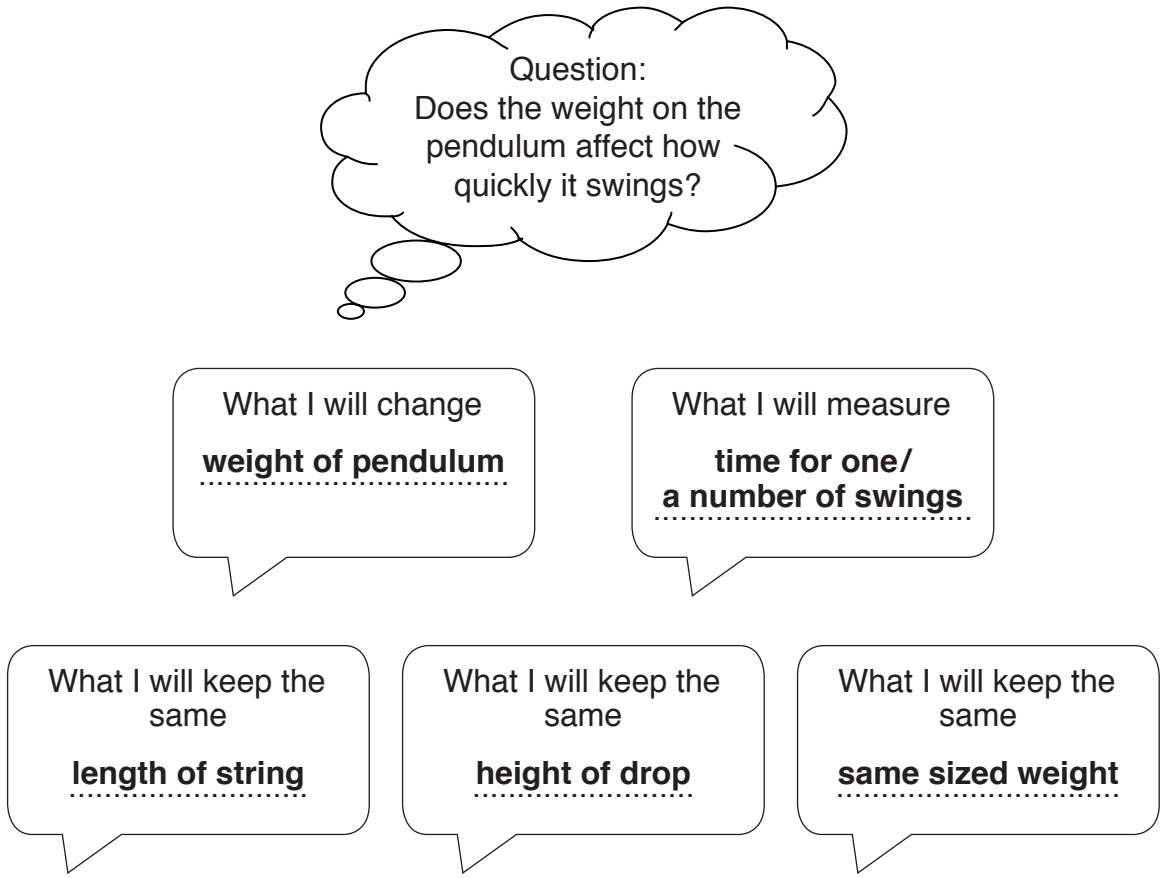
<table><tr><th>vertebrate group</th><th>skin-covering</th></tr><tr><td>amphibians</td><td>moist and no scales</td></tr><tr><td>birds</td><td>feathers</td></tr><tr><td>fish</td><td>wet scales</td></tr><tr><td>mammals</td><td>fur/hair</td></tr><tr><td>reptiles</td><td>dry scales</td></tr></table></td><td>2

3</td><td>

$\frac{1}{2}$ mark for each</td></tr>
<tr><td>(d)</td><td>has the features both of a bird and a mammal</td><td>2</td><td></td></tr>
</table>

<table>
<tr><th>Q.</th><th>Answer</th><th>Mark</th><th>Additional Guidance</th></tr>
<tr><td>6. (a)</td><td>letter P anywhere in light grey zone on surface of the Earth</td><td>1</td><td></td></tr>
<tr><td>(b)</td><td>increased darkness, drop in temperature, change in wind direction</td><td>2</td><td>any two sensible suggestions</td></tr>
<tr><td>(c)</td><td>to prevent eye damage</td><td>1</td><td></td></tr>
<tr><td>(d)</td><td></td><td>2</td><td>1 mark for the shape

1 mark for the orientation</td></tr>
<tr><td>(e)</td><td><table><tr><th>object</th><th>opaque</th><th>luminous</th></tr><tr><td>card</td><td>✓</td><td></td></tr><tr><td>Moon</td><td>✓</td><td></td></tr><tr><td>Sun</td><td></td><td>✓</td></tr></table></td><td>3</td><td></td></tr>
<tr><td>(f)</td><td>3700 × 4 = 14800 km</td><td>2</td><td></td></tr>
</table>

Q.	Answer	Mark	Additional Guidance
7. (a)	test only one variable at a time all other variables are kept the same	**2**	
(b)		**5**	accept valid alternatives
(c)	to ensure that results are reliable	**1**	

<table>
<tr><th>Q.</th><th>Answer</th><th>Mark</th><th>Additional Guidance</th></tr>
<tr><td>8. (a)</td><td>
<table>
<tr><th></th><th>balanced</th><th>unbalanced</th></tr>
<tr><td>a formula 1 driver cornering at 120 km/hr</td><td></td><td>✓</td></tr>
<tr><td>a woman walking towards you at a steady 5 km/hr</td><td>✓</td><td></td></tr>
<tr><td>a runner on the starting blocks in a 100 m-sprint</td><td>✓</td><td></td></tr>
<tr><td>a runner in the first 3 seconds of a 100 m-sprint</td><td></td><td>✓</td></tr>
<tr><td>a plane landing at an airport</td><td></td><td>✓</td></tr>
<tr><td>an ice skater slowing down</td><td></td><td>✓</td></tr>
</table>
</td><td>6</td><td></td></tr>
<tr><td>(b)</td><td>downward force arrow longer than upward force arrow</td><td>2</td><td></td></tr>
<tr><td>Total</td><td></td><td>80</td><td></td></tr>
</table>