2018_MYE_1E_LSS_ANSWER KEY

Section A

1. D	**2. D**	**3. B**	**4. C**	**5. A**	**6. B**	**7. C**	**8. A**	**9. C**	**10. C**
11. C	**12. A**	**13. B**	**14. C**	**15. D**	**16. B**	**17. A**	**18. B**	**19. A**	**20. D**

A: 5 B: 5 C: 6 D: 4

Deduct 1 mark from the total mark if a student makes any of the following mistakes in scientific drawings.

- *Did not use a pencil*
- *Did not use a ruler when straight lines are required*
- *Lines are broken/fuzzy*

Deduct 1 mark from the total mark if the student did not leave the answer in 3.s.f. or forget to put units.

Section B

Question			Answer	Marks
1	a		Explosive Corrosive *spelling mistake: deduct 0.5m from overall 1(a)*	1 1
	b	i		1
		ii		1
2	a		Soot	1
	b		Diagram 2.1: Luminous flame Diagram 2.2: Non-luminous flame *spelling mistake: deduct 0.5m from overall 2(b)*	1 1
	c		***Any of the following points*** • Non-luminous flame is hotter than luminous flame. • Non-luminous flame is steadier than luminous flame.	1
	d		***Any two of the following or logical points*** • Use a test tube holder to hold onto the test tube. • Ensure that the solution is not flammable. • Wear safety goggle. • Ensure that the mouth of the test tube is pointed away from people. • Do not fill test tube to the brim with the solution. • Long hair needs to be tie back • Ensure that there is no lose item/fittings on the body (e.g. lanyard, tie) *Note: General safety rules that are not related to heating will not be accepted (e.g. Do not eat and drink in the lab)*	2
3	a		**V** and **Y** *(no half mark)*	1
	b		steroid	1
	c		**Z**	1
	d		Pen ink can dissolve in the solvent, [1] hence, affecting the results. [1]	2

<table>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>4</td><td></td><td></td><td>• Use a magnet to remove substance Q from the mixture.
• Add alcohol to the remaining mixture and stir to dissolve substance R.
• Pour the mixture through a filtration set-up. Substance P will be trapped on the filter paper as residue while substance R will flow through as filtrate.
• Evaporate the alcohol to get back dried substance R.</td><td>0.5m each</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="8">5</td><td>a</td><td></td><td>A pure substance that cannot be broken down into simpler substances by chemical method.</td><td>1</td></tr>
<tr><td rowspan="3">b</td><td>i</td><td>Group: II Period: 6
(1m each) Do not award if student use “2” instead of “II”; and “VI” instead of 6.</td><td>2</td></tr>
<tr><td>ii</td><td>P, Q and R</td><td>1</td></tr>
<tr><td>iii</td><td>Copper; Cu (1m each)</td><td>2</td></tr>
<tr><td rowspan="4">c</td><td>i</td><td>Compound</td><td>1</td></tr>
<tr><td>ii</td><td>Mixture</td><td>1</td></tr>
<tr><td>iii</td><td>It retains the properties of its components (substances 1 and 2).

Accept if students convey above point by stating the characteristics
(e.g. substance 3 is yellowish-black, which is a mixture of the characteristics of 1 (yellow) and 2 (black))</td><td>1</td></tr>
<tr><td>iv</td><td>Any one of the answer:

<table>
<tr><th>Compound</th><th>Mixture</th></tr>
<tr><td>Made up of two or more different elements chemically combined together</td><td>Made up of two of more substances (elements or compounds) add together</td></tr>
<tr><td>Cannot be separated easily using physical method</td><td>Can be separated easily using physical method</td></tr>
<tr><td>Chemical reaction/Energy change is involved during the formation of compound</td><td>No chemical reaction/energy change is involved during the formation of mixture</td></tr>
<tr><td>Must be formed with a fixed proportion of its elements</td><td>Can be formed with any proportion of its components</td></tr>
</table>
</td><td>1</td></tr>
</table>

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Section C

<table>
<tr><th colspan="3">Question</th><th>Answer</th><th>Marks</th></tr>
<tr><td rowspan="6">1</td><td>a</td><td></td><td>28.9 – 25.3 = 3.6 cm^3 ---------- (1m for answer)</td><td>1</td></tr>
<tr><td>b</td><td></td><td>Density = 4.32/3.6 -------- (1m for applying formula correctly: mass/(a))
= 1.2 g/cm^3 ------ (1m for correct answer; allow ecf if is due wrong value of (a))</td><td>2</td></tr>
<tr><td>c</td><td></td><td>Volume of A = (4x4x4) – 3.6
= 60.4 cm^3 ------ (1m for answer; allow ecf if is due to wrong value of(a))

Mass = 60.4 x 1.2 --------- (1m for working: volume of A X (b))
= 72.5 g ---------- (1m for answer; allow ecf provided that previous 2 working mark are awarded)</td><td>3</td></tr>
<tr><td>d</td><td></td><td>Solid A and Solid B is made of the same material.</td><td>1</td></tr>
<tr><td>e</td><td></td><td>Density is defined as mass per unit volume.</td><td>1</td></tr>
<tr><td>f</td><td></td><td>When the air in the balloon is heated, the hot air becomes less dense than the outside air. [1]
This causes the hot air balloon to rise as a result of density difference between the hot air inside the balloon and the cold air outside the balloon. [1]</td><td>2</td></tr>
<tr><td colspan="5"></td></tr>
<tr><td rowspan="3">2</td><td>a</td><td></td><td><table><tr><th></th><th></th><th>Observation</th></tr><tr><td>Test 1</td><td>Look at the mixture to see whether it is clear or cloudy.</td><td>clear</td></tr><tr><td>Test 2</td><td>Filter the mixture</td><td>no residue on the filter paper</td></tr><tr><td>Test 3</td><td>Let the mixture stands for 30 minutes.</td><td>nothing settled down on the bottom</td></tr></table></td><td>3</td></tr>
<tr><td>b</td><td></td><td><table><tr><th>Way</th><th>Reason</th></tr><tr><td>Use coarse sugar</td><td>To decrease the surface area to volume ratio of the sugar.</td></tr><tr><td>Lower the temperature</td><td>sugar and water molecules will move slower</td></tr><tr><td>Do not stir the mixture</td><td>Longer time for water molecules to reach the covered sugar</td></tr></table>(1 point = 1m)</td><td>6</td></tr>
<tr><td>c</td><td>i</td><td>The mixture is satuated.</td><td>2</td></tr>
<tr><td></td><td>ii</td><td>1) Increase the temperature of the water to higher than 40 °C.
2) Increase the volume of water to more than 200 ml.</td><td>2</td></tr>
<tr><td colspan="5"></td></tr>
<tr><td rowspan="4">3</td><td rowspan="2">a</td><td>i</td><td>V : nucleus
W : large central vacuole
X : chloroplast
Y : cell membrane
Z : cell wall
:</td><td>5</td></tr>
<tr><td>ii</td><td>large central vacuole (W), chloroplsat (X) OR cell wall (Z) (any 2)</td><td>2</td></tr>
<tr><td rowspan="2">b</td><td>i</td><td>chloroplast OR structure X</td><td>1</td></tr>
<tr><td>ii</td><td>• Root hair cell is not expose to sunlight/buried underground/buried in soil,
• hence, it does not carry out photosynthesis/does not need chloroplasts to capture sunlight.</td><td>2</td></tr>
</table>