

Question	Answer	Marks	Guidance
1	B	1	
2	C	1	
3	A	1	
4	D	1	
5	A	1	
6	B	1	
7	D	1	
8	$2 \text{K}_3\text{PO}_4 + 3 \text{Ca}(\text{NO}_3)_2 \rightarrow$ $6 \text{KNO}_3 + \text{Ca}_3(\text{PO}_4)_2$	1 1	one mark for correct balancing of each side of the equation
9	D	1	
10	B	1	

11	<div> <div></div> <div>✓</div> <div>✓</div> <div></div> </div>	1	
12	<div> <div>✓</div> <div></div> <div>✓</div> <div></div> </div>	1	
14	<div> <div></div> <div>✓</div> <div></div> <div></div> </div>	1	

15	<div> <div></div> <div></div> <div>✓</div> <div></div> </div>	1	
16	<div> <div></div> <div></div> <div>✓</div> <div></div> </div>	1	
17	close to true value repeats close to mean	1 1	

18a(i)	<table><tr><td>Particle</td><td colspan="2">Relative mass</td><td colspan="2">Relative charge</td></tr><tr><td>proton</td><td colspan="2">1</td><td colspan="2">+1</td></tr><tr><td>neutron</td><td colspan="2">1</td><td colspan="2">−1</td></tr><tr><td>electron</td><td colspan="2">1/1840</td><td colspan="2">0</td></tr></table>						Particle	Relative mass		Relative charge		proton	1		+1		neutron	1		−1		electron	1/1840		0		1 1 1	one mark for each correct row
	Particle	Relative mass		Relative charge																								
	proton	1		+1																								
	neutron	1		−1																								
electron	1/1840		0																									
18a(ii)	<table><tr><td>Element</td><td>Mass number</td><td>Protons</td><td>Neutrons</td><td>Charge</td><td>Electron configuration</td></tr><tr><td>Na</td><td>23</td><td>11</td><td>13</td><td>0</td><td>2.8.1</td></tr><tr><td>S</td><td>34</td><td>16</td><td>18</td><td>2−</td><td>2.8.8</td></tr></table>						Element	Mass number	Protons	Neutrons	Charge	Electron configuration	Na	23	11	13	0	2.8.1	S	34	16	18	2−	2.8.8	1 1	one mark for each correct row		
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	Na	23	11	13	0	2.8.1																						
S	34	16	18	2−	2.8.8																							
18b	Similarities: same number of protons and electrons Differences: different numbers of protons						1																					
18c	identify molecules						1																					
	shows isotopes that make up an element						1																					