

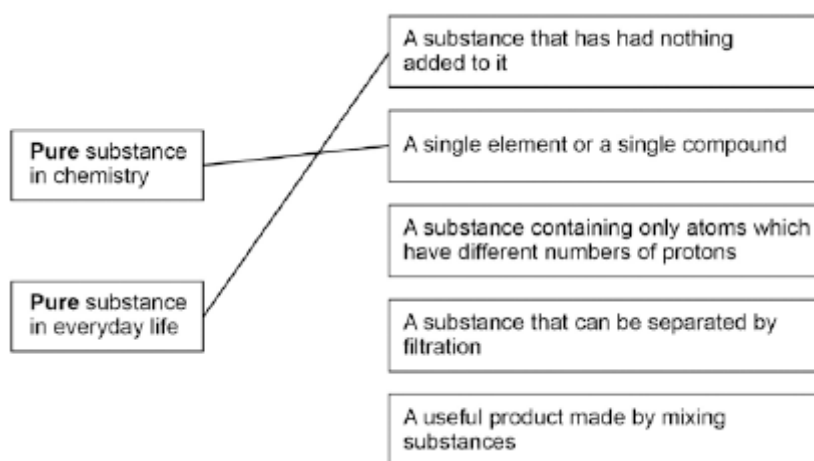
M1.(a) Air

2

Steel

1

(b)



Allow 1 mark for the correct meanings linked to context but incorrect way around

1

1

(c) Damp litmus paper turns white

1

(d) Iron(III)

1

[6]

M2.(a) argon / Ar

1

(b) (i) 0

1

(ii) unreactive

1

(c) (i) 94.96(%)

1

(ii) any **two** from:

- plants or photosynthesis
- absorbed in oceans / *seas*  
*allow oceans store or take in or dissolve carbon dioxide*
- locked up in (sedimentary) rocks
- locked up in fossil fuels

2

[6]

- M3.** (a) bar drawn correctly 78 – 80 (%) 1
- (b) (i) (Mars has) no (green / living) plants / trees 1
- (ii) (argon) is unreactive / inert 1  
*accept argon is a noble gas*  
*ignore it is in Group 0*
- (c) (the amount of carbon dioxide has decreased because it has been) absorbed /  
used by (green / living) plants / trees **or** used for photosynthesis 1  
*accept dissolved / absorbed by oceans or locked up in fossil fuels /  
carbonate rocks*
- (d) the eruption of volcanoes 1

[5]

- M4.** (a) crust  
*ignore Earth's* 1
- core  
*ignore inner and/or outer* 1
- (b) bar chart 1
- all heights are correct  
*accept correctly plotted points* 1
- all labels are correct for nitrogen, oxygen and other / argon 1
- (c) (i) decomposed 1
- (ii) global warming 1

[7]

- M5.** (a) (i) nitrogen / N<sub>2</sub> 1
- (ii) carbon dioxide / CO<sub>2</sub> 1
- (b) (i) humans / scientists had not evolved  
*accept it was billions / millions of years ago*  
*allow too long ago* 1
- (ii) temperature is above 100°C **or** any water would evaporate / boil  
*accept Venus is too hot* 1
- (c) any **three** from:
- used by plants
  - used for photosynthesis  
*accept plants take in carbon dioxide and give out oxygen for the first two bullet points ie 2 marks*
  - dissolves in oceans / seas  
*allow absorbs into oceans / seas*
  - used to form the shells / skeletons of marine organisms
  - locked up as limestone / carbonates
  - locked up as fossil fuels / oil / coal

3

[7]

M6.	(a)	core	<i>ignore outer or inner</i>	1
		mantle		1
	(b)	(i)	carbon dioxide <i>accept formula CO<sub>2</sub></i>	1
			oxygen <i>accept formulae O<sub>2</sub> / O</i>	1
		(ii)	4%	1
		(iii)	carbon dioxide has <u>decreased</u> / from 95% to 0%	1
			oxygen has <u>increased</u> / from 0% to 21%	1
			any <b>one</b> from:	
			(carbon dioxide decrease)	
			<ul style="list-style-type: none"> <li>• carbon dioxide used during photosynthesis / by plants</li> <li>• carbon dioxide dissolves in oceans</li> <li>• carbon dioxide is locked up in rocks / carbonates / fossil fuels</li> </ul>	
			(oxygen increase)	
			<ul style="list-style-type: none"> <li>• oxygen released during photosynthesis / by plants</li> </ul>	1

[8]

- M7.** (a) (i) water vapour given out from volcano  
*accept steam*  
*not hydrogen and oxygen combining*  
*to form water* 1
- condensed  
*accept rain / clouds formed just 'cools' is insufficient* 1
- (b) nitrogen (left)  $N_2$   
*do not accept N* 1
- oxygen (right)  $O_2$   
*do not accept O* 1

[4]

**M8.** (a) respiration

combustion

*1 mark each*

2

(b) methane

water

*1 mark each*

*accept steam*

*do **not** accept natural gas for methane*

*do **not** accept hydrogen oxide*

2

(c) greenhouse effect (increased)

*accept (global) warming*

*accept polar ice caps melt*

*accept rising sea levels*

*accept problems with climatic change*

*do **not** accept changes to the weather **or** acid rain*

1

[5]



- M9.** (a) (i) nitrogen (gas) **or** N<sub>2</sub>  
*if only the formula is given it must be correct in every detail* 1
- (ii) argon (gas) **or** Ar 1
- (iii) oxygen (gas) **or** O<sub>2</sub> 1
- (b) vapour 1
- evaporating 1
- sea(s) 1
- condenses 1
- (c) volcanoes **or** volcanic activity **or** the sea(s)  
*allow carbonates(s) (rocks)*  
*do not credit inside* 1

[8]